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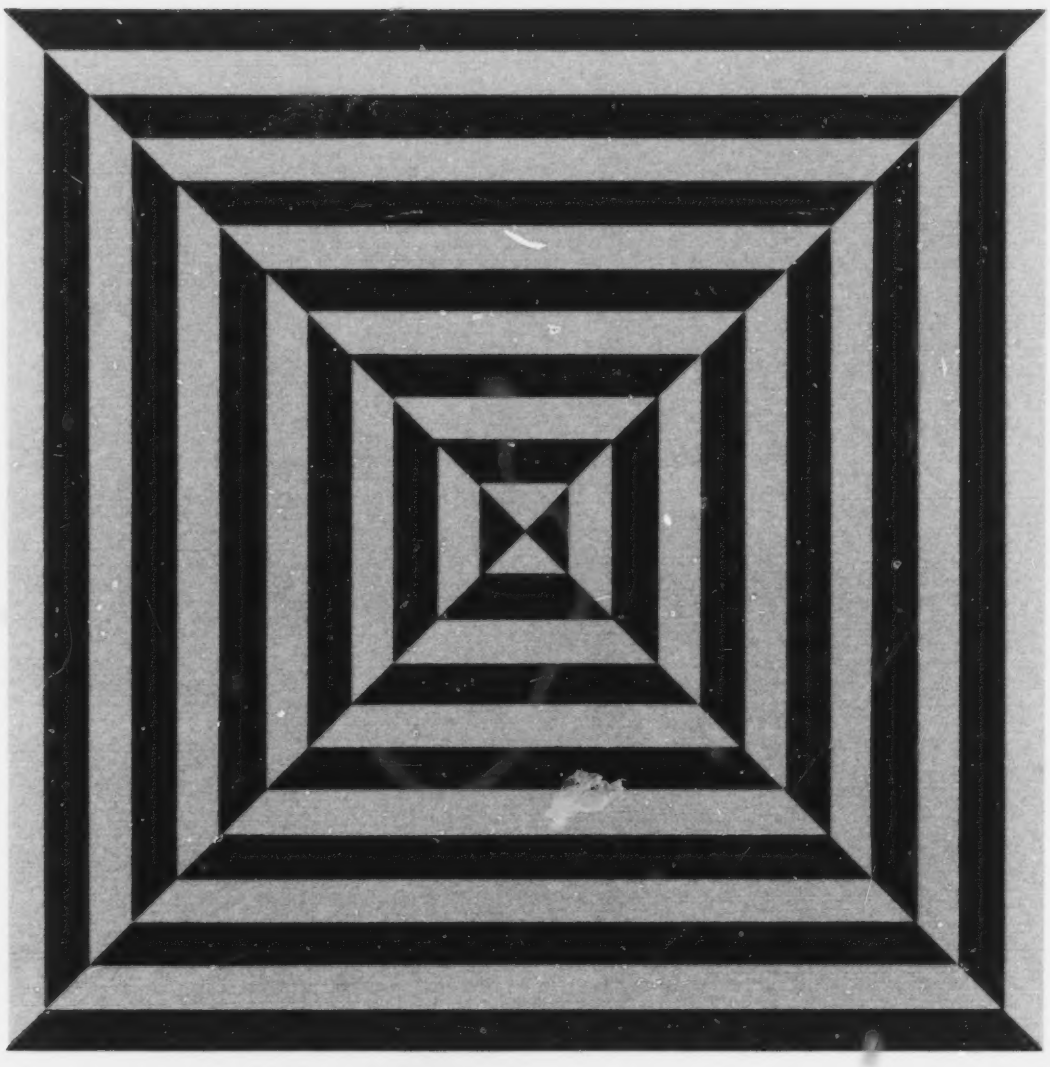
Newly Qualified Elementary and Secondary School Teachers, 1977-78 and 1978-79

Frank J. Atelsek and Irene L. Gomberg



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AMERICAN COUNCIL ON EDUCATION

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Acknowledgments

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We wish to thank the Panel's Federal Advisory Board and its Technical Advisory Committee and, of course, our HEP representatives for their continued high level of performance and cooperation.

Highlights

- Approximately 217,000 persons became eligible for the first time during 1977-78 to teach in elementary or secondary schools.
- Of the total, 187,900 (87 percent) were qualified at the bachelor's level, and 29,300 (13 percent) were qualified at the master's level.
- Of teachers at all levels, 13 percent became eligible for certification in special education.
- Almost half of the teachers at the B.A. level were qualified to teach various subject areas, 37 percent were qualified in elementary education, 12 percent in special education, and 3 percent in vocational education.
- The total number of new teachers was expected to drop by 3 percent between 1977-78 and 1978-79-- by 2 percent at the B.A. level and by 9 percent at the M.A. level.
- At the bachelor's level, greater-than-average decreases were anticipated in the number of newly qualified teachers of geology (11 percent) and of education of the mentally retarded (10 percent).
- At the B.A. level, significant increases were projected for teachers of bilingual education (46 percent), reading (16 percent), physics (11 percent), and education of the orthopedically handicapped (10 percent).

Background

The study reported here was conducted by the Higher Education Panel at the request of the National Center for Education Statistics (NCES), U.S. Department of Health, Education, and Welfare. It constitutes part of NCES's continuing commitment to monitor changes in the demand for and availability of qualified elementary and secondary school teachers.

The present survey gathered data for September 1, 1977, to August 31, 1978, by teaching specialty, on the number of people who, for the first time, had completed all requirements to teach at the elementary and secondary education levels; parallel estimates for the year September 1, 1978, to August 31, 1979, were also obtained. The survey does not provide information about the current demand for teachers. Demand data can be obtained only from the school systems that employ the teachers. Nor does the survey provide a comprehensive picture of teacher supply, which would include not only newly certified teachers but also persons certified in previous years who are seeking teaching positions.

It is important to note that NCES and the National Education Association (NEA) have conducted studies that include both the supply of and demand for newly qualified teachers: NCES recently published Teacher and School Administrator Supply and Demand, which presents selected findings from two of its earlier surveys: Survey of Recent College Graduates (1974-75) and Local Education Agency Survey of Teacher and Administrator Shortages (1977).[1] Shortly thereafter, NEA released its annual Teacher Supply and Demand in Public Schools for 1978.[2] However, owing to extreme differences in their methodologies, definitions, and eligible populations, the findings from the two reports cannot reasonably be compared with each other or with those from the HEP survey. The differences are discussed in Appendix B.

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[1] NCES78-131 (Washington: U.S. Government Printing Office, 1979).

[2] Washington: National Education Association, 1979.

The present survey of persons newly qualified to teach, it should be further noted, provides a view of the potential rather than the actual supply of teachers. The earlier analysis by NCES shows that, of the number who gained eligibility to teach for the first time in 1975-76, 23 percent did not apply for teaching jobs. Of those who did apply for teaching positions, only 54 percent were teaching full time, 10 percent were teaching part time, and the remaining 36 percent were not teaching at all. Thus, if this earlier experience is applicable to the present, fewer than half of the potential teachers identified in this survey will be in teaching positions during the year following their eligibility.

Methods Summary

The Higher Education Panel is an ongoing survey research program created in 1971 by the American Council on Education to conduct limited-scale surveys on topics of current policy interest to the higher education community and to government agencies. The Panel itself is a disproportionate stratified sample of 760 colleges and universities drawn from the more than 3,000 institutions included in the NCES Education Directory listing of 1974-75. Each institution in the population is classified in terms of the set of variables constituting the Panel's stratification design, based primarily on type (university, four-year college, two-year college), control (private, public), and size (full-time-equivalent enrollment). For any given survey, either the entire Panel or an appropriate subset may be used.

The survey reported here was limited to colleges and universities that offered teacher preparation programs. The survey instrument (Appendix A) was mailed on November 22, 1978, to the 438 Panel members that met this criterion. Mail and telephone follow-ups were conducted during December 1978 and January 1979. By the deadline for returning questionnaires, usable responses had been received from 384, or 88 percent, of the institutions.

Respondents and nonrespondents are compared in Appendix B, which also presents the standard errors of the reported national estimates.

Respondents were asked to report the number of people who, *for the first time*, completed all requirements to teach in elementary or secondary schools. Bachelor's-level teachers are reported by various teaching specialty fields, and master's-level teachers are identified as qualified in either "special education" or "all other fields."[3] Excluded from the statistics were persons at the B.A. or M.A. level whose only specialty field was education administration and those eligible for certification in library science alone.

Most newly eligible teachers receive their degrees at the same time they fulfill all requirements for certification. The present survey, however, included people who received their degrees at any time in the past but completed or would complete all certification requirements during the two years under study. The survey also included persons who had received their degrees in fields other than education.

If a teacher graduated with both a major and a minor and was qualified in both specialties, he or she was reported in only the major field of specialty. If others completed requirements in more than one specialty field, each was reported in the field for which he or she was best prepared. *Each person was to be reported only once.*

Weights were computed on the assumption that, within each stratification cell, institutions with teacher education programs in the Panel were representative of those in the entire population. Weights were computed separately to allow for differential item response. The resulting cell and item weights were applied to the responses of each institution, and the weighted data were then aggregated into the broad institutional categories used in the survey analyses.

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[3]Special education included such fields as education of the emotionally disturbed, learning disabled, mentally retarded, orthopedically handicapped, and speech impaired. See the questionnaire in Appendix A for a full listing of fields.

Findings

Between September 1, 1977, and August 31, 1978, an estimated 217,200 persons became eligible for the first time to teach in elementary or secondary schools. Nearly nine of every ten teachers were qualified at the bachelor's level. Approximately 13 percent of the total became eligible in special education. See table A.

Table A: Degree Level of Newly Qualified Teachers, 1977-78

Teaching Specialty	Total	BA Recipients	MA Recipients
Total	217,200	187,900	29,300
Special education	13%	12%	24%
All other fields	87%	88%	76%

At the master's level, 24 percent of teachers completed their eligibility requirements in the field of special education, compared with 12 percent at the bachelor's level. In fact, of all teachers who became eligible for certification in special education, one-fourth had a master's degree.

The majority (77 percent) of new teachers were trained at public institutions, principally at four-year colleges. See table B.

Table B: Source of Training of Newly Qualified Teachers, 1977-78

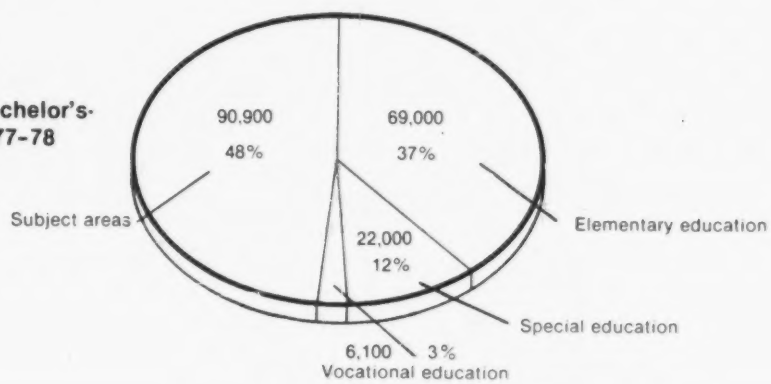
Institutional Type	Number	Percentage
Total	217,200	100
Public	167,900	77
Universities	49,700	23
Four-year colleges	118,200	54
Private	49,300	23
Universities	10,200	5
Four-year colleges	39,200	18

Note: Here and in subsequent tables, subtotals may not add exactly to their corresponding totals because of weighting and rounding.

Bachelor's Level

Of the 187,900 new teachers at the B.A. level, nearly half qualified in subject areas and four of every ten qualified in elementary education. Twelve percent were eligible to teach special education, and 3 percent, vocational education. See figure 1.

Figure 1: Distribution, by Specialty Field, of Newly Qualified Bachelor's-Level Teachers, 1977-78



Among the 90,900 new teachers who qualified in subject areas, the greatest number were trained in health, physical education, and recreation (one-fourth), followed by the social sciences (one-seventh), and English language arts (one-eighth). See table C.

Table C: Subject Areas of Newly Qualified B.A.-Level Teachers, 1977-78

Subject Areas	Number	Percentage
Total	90,900	100
Health, physical education, recreation	22,800	25
Men	(12,400)	(14)
Women	(10,400)	(11)
Social sciences	13,100	14
English language arts	10,800	12
Music	9,100	10
Natural sciences	6,700	7
Art	6,200	7
Business (nonvocational)	5,100	6
Mathematics	4,400	5
Industrial arts (nonvocational)	3,600	4
Foreign languages	3,500	4
Other	5,500	6

Estimates for 1978-79

At all institutions, as shown in Table 1, the supply of new teachers was expected to decline by 3.0 percent over the next year, to about 210,700. Private institutions, principally four-year colleges, anticipated a slightly greater rate of decline (4.1 percent and 4.4 percent, respectively). Public four-year colleges projected a decrease of 2.2 percent, whereas public universities projected a 3.9 percent decrease.

Colleges and universities estimated that the field of special education would experience a 2.7 percent drop. That drop was expected to be negligible at all public institutions (0.3 percent) but relatively high at private institutions (13.3 percent), particularly the four-year colleges (16.6 percent).

An 8.9 percent decrease was estimated for the number of new M.A.-level teachers during 1978-79. The rate was expected to be highest at private four-year colleges (17.1 percent) and lowest at public universities (1.5 percent). See Table 2.

At the B.A. level, a 2.1 percent decrease was estimated overall. Public universities, which in 1977-78 trained approximately 23 percent of the B.A.-level teachers, anticipated losing 4.3 percent. In contrast, private universities, which produced less than 4 percent of B.A.-level teachers, anticipated approaching a 2 percent increase. Possibly at these latter institutions the capacity for teacher production and their locations are such that they can absorb a modest growth. See Tables 3-9.

Among new bachelor's-level teachers, the percentage distribution by field of specialty was expected to remain relatively constant. Several fields, however, projected greater-than-average decreases, among them geology at 11 percent and education of the mentally retarded at 10 percent. Despite decreases in most specialties in teacher education at the bachelor's level, institutions estimated increases for several fields in the number of newly qualified teachers, the most significant being bilingual education, 46 percent; reading, 16 percent; physics, 11 percent; and education of the orthopedically handicapped, 10 percent. See figure 2.

Figure 2:
Percentage Change, by Specialty Fields, of Newly Qualified Bachelor's-Level Teachers, 1977-78—1978-79

Basic Report Tables

Table 1

Newly Qualified Teachers, Bachelor's and Master's Recipients, 1977-78 and 1978-79, Type and Control of Institution

Teaching Specialty	1977-78 Number	1977-78 Percent	1978-79 Number	1978-79 Percent	Percentage Change
			ALL INSTITUTIONS		
Special education	29,099	13.4	28,319	13.4	-2.7
All other	188,136	86.6	182,386	86.6	-3.1
Total	217,235	100.0	210,705	100.0	-3.0
			PUBLIC INSTITUTIONS		
Special education	23,731	14.1	23,664	14.5	-0.3
All other	144,161	85.9	139,740	85.5	-3.1
Total	167,892	100.0	163,404	100.0	-2.7
			PRIVATE INSTITUTIONS		
Special education	5,368	10.9	4,655	9.8	-13.3
All other	43,975	89.1	42,646	90.2	-3.2
Total	49,343	100.0	47,301	100.0	-4.1
			PUBLIC UNIVERSITIES		
Special education	6,105	12.3	6,087	12.7	-0.3
All other	43,599	87.7	41,675	87.3	-4.4
Total	49,704	100.0	47,762	100.0	-3.9
			PRIVATE UNIVERSITIES		
Special education	2,273	22.4	2,075	21.1	-8.7
All other	7,883	77.6	7,772	78.9	-1.4
Total	10,156	100.0	9,847	100.0	-3.0
			PUBLIC FOUR-YEAR COLLEGES		
Special education	17,626	14.9	17,577	15.2	-0.3
All other	100,562	85.1	98,065	84.8	-2.5
Total	118,188	100.0	115,642	100.0	-2.2
			PRIVATE FOUR-YEAR COLLEGES		
Special education	3,095	7.9	2,580	6.9	-16.6
All other	36,092	92.1	34,874	93.1	-3.4
Total	39,187	100.0	37,454	100.0	-4.4

Table 2

Master's Recipients Newly Qualified to Teach, 1977-78 and 1978-79, Institutional Type and Control

Teaching Specialty	1977-78 Number	1977-78 Percent	1978-79 Number	1978-79 Percent	Percentage Change
			ALL INSTITUTIONS		
Special education	7,076	24.2	6,613	24.8	-6.5
All other	22,217	75.8	20,073	75.2	-9.7
Total	29,293	100.0	26,686	100.0	-8.9
			PUBLIC INSTITUTIONS		
Special education	5,119	22.7	4,987	23.7	-2.6
All other	17,459	77.3	16,014	76.3	-8.3
Total	22,578	100.0	21,001	100.0	-7.0
			PRIVATE INSTITUTIONS		
Special education	1,957	29.1	1,626	28.6	-16.9
All other	4,758	70.9	4,059	71.4	-14.7
Total	6,715	100.0	5,685	100.0	-15.3
			PUBLIC UNIVERSITIES		
Special education	1,196	17.6	1,247	18.6	+4.3
All other	5,599	82.4	5,444	81.4	-2.8
Total	6,795	100.0	6,691	100.0	-1.5
			PRIVATE UNIVERSITIES		
Special education	1,116	34.9	949	34.2	-15.0
All other	2,082	65.1	1,822	65.8	-12.5
Total	3,198	100.0	2,771	100.0	-13.4
			PUBLIC FOUR-YEAR COLLEGES		
Special education	3,923	24.9	3,740	26.1	-4.7
All other	11,860	75.1	10,570	73.9	-10.9
Total	15,783	100.0	14,310	100.0	-9.3
			PRIVATE FOUR-YEAR COLLEGES		
Special education	841	23.9	677	23.2	-19.5
All other	2,676	76.1	2,237	76.8	-16.4
Total	3,517	100.0	2,914	100.0	-17.1

Table 3

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: All Institutions

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	12,324	6.6	12,432	6.8	+.9
Elementary education	55,801	29.7	53,982	29.3	-3.3
Other elementary	854	.5	814	.4	-4.7
Subtotal	*68,979*	*36.7*	*67,228*	*36.5*	*-2.5*
Subject Areas					
Art	6,209	3.3	5,785	3.1	-6.8
Bilingual	825	.4	1,209	.7	+46.5
Business (nonvocational)	5,054	2.7	5,260	2.9	+4.1
English language arts	10,835	5.8	9,957	5.4	-8.1
Foreign languages	3,452	1.8	3,153	1.7	-8.7
Gifted and talented	120	.1	126	.1	+5.0
Health, physical education, recreation	22,842	12.2	22,526	12.2	-1.4
Men	(12,415)	(6.6)	(11,994)	(6.5)	(-3.4)
Women	(10,427)	(5.5)	(10,532)	(5.7)	(+1.0)
Home economics (nonvocational)	2,986	1.6	2,885	1.6	-3.4
Industrial arts (nonvocational)	3,626	1.9	3,534	1.9	-2.5
Mathematics	4,435	2.4	4,039	2.2	-8.9
Music	9,119	4.9	9,258	5.0	+1.5
Natural and physical sciences					
Physics	270	.1	299	.2	+10.7
Chemistry	681	.4	661	.4	-2.9
Biology	3,927	2.1	3,901	2.1	-.7
Geology, earth sciences	537	.3	478	.3	-11.0
Other, including general, science	1,313	.7	1,214	.7	-7.5
Reading	1,376	.7	1,590	.9	+15.6
Social sciences	13,056	6.9	12,971	7.0	-.7
Other subjects	223	.1	204	.1	-8.5
Subtotal	*90,886*	*48.4*	*89,050*	*48.4*	*-2.0*
Vocational Education					
Agriculture	1,571	.8	1,532	.8	-2.5
Distributive education	500	.3	460	.2	-8.0
Health occupations	346	.2	366	.2	+5.8
Occupational home economics	1,745	.9	1,690	.9	-3.2
Office occupations	586	.3	631	.3	+7.7
Technical education	538	.3	537	.3	-.2
Trade and industry	768	.4	819	.4	+6.6
Subtotal	*6,054*	*3.2*	*6,035*	*3.3*	*-.3*
Special Education					
Comprehensive special education	6,506	3.5	6,952	3.8	+6.9
Emotionally disturbed	1,625	.9	1,624	.9	-.1
Learning disabled	3,196	1.7	3,214	1.7	+.6
Mentally retarded	6,228	3.3	5,604	3.0	-10.0
Orthopedically handicapped	428	.2	469	.3	+9.6
Speech impaired	2,287	1.2	2,152	1.2	-5.9
Hearing impaired	1,016	.5	1,005	.5	-1.1
Visually handicapped	222	.1	203	.1	-8.6
Other special education	515	.3	483	.3	-6.2
Subtotal	*22,023*	*11.7*	*21,706*	*11.8*	*-1.4*
Total	187,942	100.0	184,019	100.0	-2.1

Table 4
Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Public Institutions

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	9,933	6.8	9,824	6.9	-1.1
Elementary education	39,784	27.4	37,841	26.6	-4.9
Other elementary	707	.5	750	.5	+6.1
Subtotal	*50,424*	*34.7*	*48,415*	*34.0*	*-4.0*
Subject Areas					
Art	5,120	3.5	4,822	3.4	-5.8
Bilingual	511	.4	643	.5	+25.8
Business (nonvocational)	4,278	2.9	4,427	3.1	+3.5
English language arts	7,863	5.4	7,490	5.3	-4.7
Foreign languages	2,440	1.7	2,264	1.6	-7.2
Gifted and talented	120	.1	126	.1	+5.0
Health, physical education, recreation	18,098	12.5	18,106	12.7	*
Men	(9,510)	(6.5)	(9,392)	(6.6)	(-1.2)
Women	(8,588)	(5.9)	(8,714)	(6.1)	(+1.5)
Home economics (nonvocational)	2,506	1.7	2,493	1.8	-.5
Industrial arts (nonvocational)	3,516	2.4	3,441	2.4	-2.1
Mathematics	3,320	2.3	3,087	2.2	-7.0
Music	6,143	4.2	6,190	4.3	+.8
Natural and physical sciences					
Physics	223	.2	220	.2	-1.3
Chemistry	446	.3	472	.3	+5.8
Biology	2,841	2.0	2,834	2.0	-.2
Geology, earth sciences	435	.3	429	.3	-1.4
Other, including general, science	1,132	.8	1,102	.8	-2.7
Reading	1,108	.8	1,316	.9	+18.8
Social sciences	10,082	6.9	9,752	6.8	-3.3
Other subjects	180	.1	164	.1	-8.9
Subtotal	*70,362*	*48.4*	*69,378*	*48.7*	*-1.4*
Vocational Education					
Agriculture	1,571	1.1	1,532	1.1	-2.5
Distributive education	499	.3	457	.3	-8.4
Health occupations	316	.2	347	.2	+9.8
Occupational home economics	1,645	1.1	1,610	1.1	-2.1
Office occupations	579	.4	631	.4	+9.0
Technical education	538	.4	537	.4	-.2
Trade and industry	768	.5	819	.6	+6.6
Subtotal	*5,916*	*4.1*	*5,933*	*4.2*	*+.3*
Special Education					
Comprehensive special education	5,666	3.9	5,899	4.1	+4.1
Emotionally disturbed	1,380	.9	1,348	.9	-2.3
Learning disabled	2,598	1.8	2,957	2.1	+13.8
Mentally retarded	5,050	3.5	4,726	3.3	-6.4
Orthopedically handicapped	359	.2	398	.3	+10.9
Speech impaired	2,037	1.4	1,877	1.3	-7.9
Hearing impaired	865	.6	847	.6	-2.1
Visually handicapped	198	.1	181	.1	-8.6
Other special education	459	.3	444	.3	-3.3
Subtotal	*18,612*	*12.8*	*18,677*	*13.1*	*+.3*
Total	145,314	100.0	142,403	100.0	-2.0

*Less than .05 percent.

Table 5

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Private Institutions

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	2,391	5.6	2,608	6.3	+9.1
Elementary education	16,017	37.6	16,141	38.8	+.8
Other elementary	147	.3	64	.2	-56.5
Subtotal	*18,555*	*43.6*	*18,813*	*45.2*	*+1.4*
Subject Areas					
Art	1,089	2.6	963	2.3	-11.6
Bilingual	314	.7	566	1.4	+80.3
Business (nonvocational)	776	1.8	833	2.0	+7.3
English language arts	2,972	7.0	2,467	5.9	-17.0
Foreign languages	1,012	2.4	889	2.1	-12.2
Gifted and talented	0	0	0	0	0
Health, physical education, recreation	*4,744*	*11.1*	*4,420*	*10.6*	*-6.8*
Men	(2,905)	(6.8)	(2,602)	(6.3)	(-10.4)
Women	(1,839)	(4.3)	(1,818)	(4.4)	(-1.1)
Home economics (nonvocational)	480	1.1	392	.9	-18.3
Industrial arts (nonvocational)	110	.3	93	.2	-15.5
Mathematics	1,115	2.6	952	2.3	-14.6
Music	2,976	7.0	3,068	7.4	+3.1
Natural and physical sciences					
Physics	47	.1	79	.2	+68.1
Chemistry	235	.6	189	.5	-19.6
Biology	1,086	2.5	1,067	2.6	-1.7
Geology, earth sciences	102	.2	49	.1	-52.0
Other, including general, science	181	.4	112	.3	-38.1
Reading	268	.6	274	.7	+2.2
Social sciences	2,974	7.0	3,219	7.7	+8.2
Other subjects	43	.1	40	.1	-7.0
Subtotal	*20,524*	*48.1*	*19,672*	*47.3*	*-4.2*
Vocational Education					
Agriculture	0	0	0	0	0
Distributive education	1	*	3	*	+200.0
Health occupations	30	.1	19	*	-36.7
Occupational home economics	100	.2	80	.2	-20.0
Office occupations	7	*	0	0	—
Technical education	0	0	0	0	0
Trade and industry	0	0	0	0	0
Subtotal	*138*	*.3*	*102*	*.2*	*-26.1*
Special Education					
Comprehensive special education	840	2.0	1,053	2.5	+25.4
Emotionally disturbed	245	.6	276	.7	+12.7
Learning disabled	598	1.4	257	.6	-57.0
Mentally retarded	1,178	2.8	878	2.1	-25.5
Orthopedically handicapped	69	.2	71	.2	+2.9
Speech impaired	250	.6	275	.7	+10.0
Hearing impaired	151	.4	158	.4	+4.6
Visually handicapped	24	.1	22	.1	-8.3
Other special education	56	.1	39	.1	-30.4
Subtotal	*3,411*	*8.0*	*3,029*	*7.3*	*-11.2*
Total	42,628	100.0	41,616	100.0	-2.4

*Less than .05 percent.

Table 6

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Public Universities

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	2,472	5.8	2,463	6.0	-.4
Elementary education	11,728	27.3	11,227	27.3	-4.3
Other elementary	177	.4	172	.4	-2.8
Subtotal	*14,377*	*33.5*	*13,862*	*33.8*	*-3.6*
Subject Areas					
Art	1,553	3.6	1,414	3.4	-9.0
Bilingual	128	.3	146	.4	+14.1
Business (nonvocational)	887	2.1	874	2.1	-1.5
English language arts	2,439	5.7	2,281	5.6	-6.5
Foreign languages	882	2.1	839	2.0	-4.9
Gifted and talented	16	*	25	.1	+56.3
Health, physical education, recreation	5,040	11.7	4,816	11.7	-4.4
Men	(2,428)	(5.7)	(2,279)	(5.5)	(-6.1)
Women	(2,612)	(6.1)	(2,537)	(6.2)	(-2.9)
Home economics (nonvocational)	883	2.1	872	2.1	-1.2
Industrial arts (nonvocational)	795	1.9	769	1.9	-3.3
Mathematics	1,022	2.4	927	2.3	-9.3
Music	1,961	4.6	1,886	4.6	-3.8
Natural and physical sciences					
Physics	62	.1	77	.2	+24.2
Chemistry	113	.3	130	.3	+15.0
Biology	899	2.1	888	2.2	-1.2
Geology, earth sciences	77	.2	82	.2	+6.5
Other, including general, science	476	1.1	470	1.1	-1.3
Reading	234	.5	167	.4	-28.6
Social sciences	2,973	6.9	2,631	6.4	-11.5
Other subjects	56	.1	33	.1	-41.1
Subtotal	*20,496*	*47.8*	*19,327*	*47.1*	*-5.7*
Vocational Education					
Agriculture	1,096	2.6	1,059	2.6	-3.4
Distributive education	213	.5	204	.5	-4.2
Health occupations	81	.2	83	.2	+2.5
Occupational home economics	948	2.2	885	2.2	-6.6
Office occupations	267	.6	266	.6	-.4
Technical education	58	.1	73	.2	+25.9
Trade and industry	464	1.1	472	1.1	+1.7
Subtotal	*3,127*	*7.3*	*3,042*	*7.4*	*-2.7*
Special Education					
Comprehensive special education	1,450	3.4	1,410	3.4	-2.8
Emotionally disturbed	268	.6	246	.6	-8.2
Learning disabled	469	1.1	522	1.3	+11.3
Mentally retarded	1,655	3.9	1,601	3.9	-3.3
Orthopedically handicapped	78	.2	77	.2	-1.3
Speech impaired	514	1.2	514	1.3	0
Hearing impaired	296	.7	312	.8	+5.4
Visually handicapped	77	.2	68	.2	-11.7
Other special education	102	.2	90	.2	-11.8
Subtotal	*4,909*	*11.4*	*4,840*	*11.8*	*-1.4*
Total	42,909	100.0	41,071	100.0	-4.3

*Less than .05 percent.

Table 7

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Private Universities

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	280	4.0	260	3.7	-7.1
Elementary education	2,004	28.8	1,901	26.9	-5.1
Other elementary	79	1.1	30	.4	-62.0
Subtotal	*2,363*	*34.0*	*2,191*	*31.0*	*-7.3*
Subject Areas					
Art	196	2.8	177	2.5	-9.7
Bilingual	98	1.4	137	1.9	+39.8
Business (nonvocational)	74	1.1	58	.8	-21.6
English language arts	461	6.6	444	6.3	-3.7
Foreign languages	190	2.7	168	2.4	-11.6
Gifted and talented	0	0	0	0	0
Health, physical education, recreation	784	11.3	815	11.5	+4.0
Men	(496)	(7.1)	(486)	(6.9)	(-2.0)
Women	(288)	(4.1)	(329)	(4.6)	(+14.2)
Home economics (nonvocational)	28	.4	19	.3	-32.1
Industrial arts (nonvocational)	14	.2	14	.2	0
Mathematics	200	2.9	198	2.8	-1.0
Music	437	6.3	380	5.4	-13.0
Natural and physical sciences					
Physics	23	.3	17	.2	-26.1
Chemistry	31	.4	28	.4	-9.7
Biology	97	1.4	113	1.6	+16.5
Geology, earth sciences	23	.3	12	.2	-47.8
Other, including general, science	65	.9	57	.8	-12.3
Reading	128	1.8	141	2.0	+10.2
Social sciences	532	7.6	937	13.2	-76.1
Other subjects	2	*	10	.1	+400.0
Subtotal	*3,383*	*48.6*	*3,725*	*52.6*	*+10.1*
Vocational Education					
Agriculture	0	0	0	0	0
Distributive education	1	*	3	*	+200.0
Health occupations	17	.2	0	0	—
Occupational home economics	37	.5	31	.4	-16.2
Office occupations	0	0	0	0	0
Technical education	0	0	0	0	0
Trade and industry	0	0	0	0	0
Subtotal	*55*	*.8*	*34*	*.5*	*-38.2*
Special Education					
Comprehensive special education	445	6.4	476	6.7	+7.0
Emotionally disturbed	163	2.3	151	2.1	-7.4
Learning disabled	91	1.3	102	1.4	+12.1
Mentally retarded	132	1.9	117	1.7	-11.4
Orthopedically handicapped	0	0	0	0	0
Speech impaired	155	2.2	138	2.0	-11.0
Hearing impaired	91	1.3	81	1.1	-11.0
Visually handicapped	24	.3	22	.3	-8.3
Other special education	56	.8	39	.6	-30.4
Subtotal	*1,157*	*16.6*	*1,126*	*15.9*	*-2.7*
Total	6,958	100.0	7,076	100.0	+1.7

*Less than .05 percent.

Table 8

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Public Four-Year Institutions

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	7,461	7.3	7,361	7.3	-1.3
Elementary education	28,056	27.4	26,614	26.3	-5.1
Other elementary	530	.5	578	.6	+9.1
Subtotal	*36,047*	*35.2*	*34,553*	*34.1*	*-4.1*
Subject Area:					
Art	3,567	3.5	3,408	3.4	-4.5
Bilingual	383	.4	497	.5	+29.8
Business (nonvocational)	3,391	3.3	3,553	3.5	+4.8
English language arts	5,424	5.3	5,209	5.1	-4.0
Foreign languages	1,558	1.5	1,425	1.4	-8.5
Gifted and talented	104	.1	101	.1	-2.9
Health, physical education, recreation	13,058	12.8	13,290	13.1	+1.8
Men	(7,082)	(6.9)	(7,113)	(7.0)	(+.4)
Women	(5,976)	(5.8)	(6,177)	(6.1)	**(+3.4)**
Home economics (nonvocational)	1,623	1.6	1,621	1.6	-.1
Industrial arts (nonvocational)	2,721	2.7	2,672	2.6	-1.8
Mathematics	2,298	2.2	2,160	2.1	-6.0
Music	4,182	4.1	4,304	4.2	+2.9
Natural and physical sciences					
Physics	161	.2	143	.1	-11.2
Chemistry	333	.3	342	.3	+2.7
Biology	1,942	1.9	1,946	1.9	+.2
Geology, earth sciences	358	.3	347	.3	-3.1
Other, including general, science	656	.6	632	.6	-3.7
Reading	874	.9	1,149	1.1	+31.5
Social sciences	7,109	6.9	7,121	7.0	+.2
Other subjects	124	.1	131	.1	+5.6
Subtotal	*49,866*	*48.7*	*50,051*	*49.4*	*+.4*
Vocational Education					
Agriculture	475	.5	473	.5	-.4
Distributive education	286	.3	253	.2	-11.5
Health occupations	235	.2	264	.3	+12.3
Occupational home economics	697	.7	725	.7	+4.0
Office occupations	312	.3	365	.4	+17.0
Technical education	480	.5	464	.5	-3.3
Trade and industry	304	.3	347	.3	+14.1
Subtotal	*2,789*	*2.7*	*2,891*	*2.9*	*+3.7*
Special Education					
Comprehensive special education	4,216	4.1	4,489	4.4	+6.5
Emotionally disturbed	1,112	1.1	1,102	1.1	-.9
Learning disabled	2,129	2.1	2,435	2.4	+14.4
Mentally retarded	3,395	3.3	3,125	3.1	-8.0
Orthopedically handicapped	281	.3	321	.3	+14.2
Speech impaired	1,523	1.5	1,363	1.3	-10.5
Hearing impaired	569	.6	535	.5	-6.0
Visually handicapped	121	.1	113	.1	-6.6
Other special education	357	.3	354	.3	-.8
Subtotal	*13,703*	*13.4*	*13,837*	*13.7*	*+1.0*
Total	102,405	100.0	101,332	100.0	-1.0

Table 9

Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Private Four-Year Institutions

Teaching Specialty	9/1/77 - 8/31/78 Number	%	9/1/78 - 8/31/79 Number	%	% Change in Number
Elementary Education					
Early childhood education	2,111	5.9	2,348	6.8	+11.2
Elementary education	14,013	39.3	14,240	41.2	+1.6
Other elementary	68	.2	34	.1	-50.0
Subtotal	*16,192*	*45.4*	*16,622*	*48.1*	*+2.7*
Subject Areas					
Art	893	2.5	786	2.3	-12.0
Bilingual	216	.6	429	1.2	+98.6
Business (nonvocational)	702	2.0	775	2.2	+10.4
English language arts	2,511	7.0	2,023	5.9	-19.4
Foreign languages	822	2.3	721	2.1	-12.3
Gifted and talented	0	0	0	0	0
Health, physical education, recreation	3,960	11.1	3,605	10.4	-9.0
Men	(2,409)	(6.8)	(2,116)	(6.1)	(-12.2)
Women	(1,551)	(4.3)	(1,489)	(4.3)	(-4.0)
Home economics (nonvocational)	452	1.3	373	1.1	-17.5
Industrial arts (nonvocational)	96	.3	79	.2	-17.7
Mathematics	915	2.6	754	2.2	-17.6
Music	2,539	7.1	2,688	7.8	+5.9
Natural and physical sciences					
Physics	24	.1	62	.2	+158.3
Chemistry	204	.6	161	.5	-21.1
Biology	989	2.8	954	2.8	-3.5
Geology, earth sciences	79	.2	37	.1	-53.2
Other, including general, science	116	.3	55	.2	-52.6
Reading	140	.4	133	.4	-5.0
Social sciences	2,442	6.8	2,282	6.6	-6.6
Other subjects	41	.1	30	.1	-26.8
Subtotal	*17,141*	*48.1*	*15,947*	*46.2*	*-7.0*
Vocational Education					
Agriculture	0	0	0	0	0
Distributive education	0	0	0	0	0
Health occupations	13	*	19	.1	+46.2
Occupational home economics	63	.2	49	.1	-22.2
Office occupations	7	*	0	0	—
Technical education	0	0	0	0	0
Trade and industry	0	0	0	0	0
Subtotal	*83*	*.2*	*68*	*.2*	*-18.1*
Special Education					
Comprehensive special education	395	1.1	577	1.7	+46.1
Emotionally disturbed	82	.2	125	.4	+52.4
Learning disabled	507	1.4	155	.4	-69.4
Mentally retarded	1,046	2.9	761	2.2	-27.2
Orthopedically handicapped	69	.2	71	.2	+2.9
Speech impaired	95	.3	137	.4	+44.2
Hearing impaired	60	.2	77	.2	+28.3
Visually handicapped	0	0	0	0	0
Other special education	0	0	0	0	0
Subtotal	*2,254*	*6.3*	*1,903*	*5.5*	*-15.6*
Total	35,670	100.0	34,540	100.0	-3.2

*Less than .05 percent.

APPENDIX A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

HIGHER EDUCATION PANEL
(202) 833-4757

November 22, 1978

Dear Higher Education Panel Representative:

Enclosed is the forty-fifth survey of the Higher Education Panel, "Survey of Teacher Education." Part I of the survey is sponsored by the National Center for Education Statistics (NCES), U.S. Department of Health, Education, and Welfare. It seeks information, by teaching specialty, on the number of individuals who are completing for the first time all requirements to teach in elementary and/or secondary school. Part II concerning teaching courses is included at the request of the National Science Foundation.

The information obtained from your institution will help provide a picture of the national supply/demand situation for teachers. More specifically it will assist the Congress in considering new legislation, modifying existing legislation, and in establishing funding levels for federal education programs. Institutions of higher education will find the data useful in planning education training programs.

Through a field test of this survey we learned that officials who are best able to respond to the questionnaire are the deans of the school of education and the registrars. As usual, however, we leave the choice of the most appropriate respondent to you.

Please understand that responses for your institution will be held in strictest confidence. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. While you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by December 15, 1978. A prepaid return envelope has been enclosed for your convenience. If you have any problems or questions, please do not hesitate to telephone us collect at 202-833-4757.

Thank you for your continuing cooperation.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

American Council on Education
Higher Education Panel Survey No. 45

SURVEY OF TEACHER EDUCATION

OMB #099-R0265
Exp. 6/81

I. Please report the number of people who completed **for the first time** all requirements to teach in elementary and/or secondary school.
PLEASE READ ALL INSTRUCTIONS CAREFULLY. PLEASE REPORT EACH PERSON ONLY ONCE.

INSTRUCTIONS

1. **To complete column 1**, include people who BOTH received their BA anytime before 9/1/78 AND completed all requirements to teach, including practice teaching, during the period 9/1/77 through 8/31/78. Do not include people who received a standard teaching certificate in any field prior to 9/1/77.

2. **To complete column 2**, the dates are moved ahead one year: Include people who will have BOTH received their BA anytime before 9/1/79 AND completed all requirements to teach, including practice teaching, during the period 9/1/78 through 8/31/79. Do not include people who received a standard teaching certificate in any field prior to 9/1/78. Please provide your best estimate.

3. If BA recipients graduating with both a major and a minor in education are qualified to teach both specialties, **report only the major specialty.** If others complete all requirements to teach in more than one specialty field, **report that field for which the person is best prepared.**

4. Include individuals completing all requirements to teach who received their degrees in fields **other than education.**

5. **Exclude** persons whose only specialty field is education administration.

A. Bachelor's Degree Recipients (those who received the degree **anytime** before September 1, 1978 for **column 1** and September 1, 1979 for **column 2**)

TEACHING SPECIALTY FIELD (see selected definitions)	(1) Persons completing requirements **for the first time** to teach, 9/1/77 through 8/31/78	(2) Persons completing requirements **for the first time** to teach, 9/1/78 through 8/31/79 (estimate)
Elementary education		
Early childhood education (pre-primary—grade 3)		
Elementary education		
Other elementary (specify): _____		
Subject areas (elementary and/or secondary)		
Art		
Bilingual		
Business (nonvocational)		
English language arts		
Foreign languages		
Gifted and talented		
Health, physical education, recreation (report by sex)		
Men		
Women		
Home economics (nonvocational)		
Industrial arts (nonvocational)		
Mathematics		
Music		
Natural and physical sciences		
Physics		
Chemistry		
Biology		
Other, including general science (specify: _____)		
Reading		
Social sciences		
Other subjects (specify) _____		
Vocational education		
Agriculture		

6. Report each person in the **one** teaching specialty field listed which best matches the field in which the person has received training. If there is no similarity at all between the field in which the person has received training and any of the fields listed, report the person in an **other** category.

(Please note that the list of teaching specialty fields is slightly different from the HEGIS taxonomy. Because of the sponsor's needs, some fields are disaggregated.)

SEE FIELD DEFINITIONS OVER

7. To complete part B, follow instructions 1 through 5 for part A, substituting **master's** degree recipients for **bachelor's** degree recipients.

Distributive education		
Health occupations		
Occupational home economics		
Office occupations		
Technical education		
Trade and industry		
Special education (elementary and/or secondary)		
Comprehensive special education		
Emotionally disturbed		
Learning disabled		
Mentally retarded		
Orthopedically handicapped		
Speech impaired		
Hearing impaired		
Visually handicapped		
Other special education (specify)		
_____		

B. Master's Degree Recipients (those who received the degree **anytime** before September 1, 1978 for **column 1** and September 1, 1979 for **column 2**).

TEACHING SPECIALTY FIELD	(1) Persons completing requirements **for the first time** to teach, 9/1/77 through 8/31/78	(2) Persons completing requirements **for the first time** to teach, 9/1/78 through 8/31/79 (estimate)
MA in special education (including specialty fields)		
MA in all other fields		

II. COURSES DESIGNED FOR TEACHING AT THE JUNIOR HIGH OR MIDDLE SCHOOL LEVELS:

Do not count elementary or secondary education courses that may include junior high or middle school teaching as only a component of more general coverage.

A **course** is a formally offered unit of instruction for which academic credit is earned, comprised of 22.5 clock hours or more of instructional contact, or the equivalent.

If an undergraduate course may be taken for graduate credit **count it as an undergraduate course.**

How many undergraduate and graduate courses does your institution offer which are **specifically designed for teaching at the junior high school and/or middle school levels?**

_____ Number of undergraduate courses

_____ Number of graduate courses

THANK YOU FOR YOUR ASSISTANCE.

Please return this form by **December 15, 1978**

TO: HIGHER EDUCATION PANEL
AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE, N.W.
WASHINGTON, D.C. 20036

PLEASE KEEP A COPY OF THIS FORM FOR YOUR RECORDS.

Respondent's Name _____

Office _____ Telephone _____

If you have any questions please call (collect) 202/833-4757.

Selected Teaching Specialty Field Definitions

Elementary

Early childhood education. Preparation to teach children in nursery, kindergarten, and/or primary grades 1-3.

Elementary education. Preparation to teach children in a general, nonspecialized educational program in any grade between kindergarten and grade 8.

Subject areas (elementary and/or secondary)

Bilingual. Preparation to teach academic subjects to pupils with limited English-speaking ability, using the English language and one other language with equal proficiency.

Business education. Preparation to teach business courses in an academic (nonvocational) setting.

English language arts. Preparation to teach the English language arts as a specialized subject matter, as in a high, junior high, or middle school. Include speech and drama teachers but exclude reading or ESL/EFL teachers.

Foreign languages. Preparation to teach English as a foren or second language.

Gifted and talented. Preparation to teach children capable of high performance, including those with demonstrated achievement or ability in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, or psychomotor ability.

Health, physical education, recreation. Also include persons preparing to teach driver and safety education or to hold full-time athletics post.

Home economics education. Preparation to teach nonvocational home economics.

Industrial arts. Preparation to teach nonvocational industrial arts.

Reading. Preparation to teach reading as a separate subject, as distinct from English language arts.

Social sciences. Preparation to teach history, civics, social studies, and related subjects.

Vocational education

Health occupations. Preparation to train persons for occupations in the health field which are supportive to health professions.

Special education (elementary and/or secondary)

Comprehensive special education. Preparation to teach children mildly to moderately handicapped whose physical, emotional, mental or social needs require a special curriculum.

Learning disabled. Preparation to teach children who have disorders in one or more of the basic psychological processes involved in understanding of in the use of language, either of which may be manifested in an imperfect ability to listen, think, speak, read, spell, or to do mathematical calculations. These disorders include perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

Orthopedically handicapped. Preparation to teach children who have severe orthopedic impairments which adversely affect their educational performance.

Speech impaired. Preparation to teach children who have a speech or language impairment which adversely affects their educational performance.

APPENDIX B: Methodology

The survey instrument was mailed on November 22, 1978, to the 438 Panel member institutions who, according to The College Handbook Index of Majors (New York: College Entrance Examination Board, 1977), offered programs in teacher preparation. By the close of the field phase, 384 institutions, or 88 percent of those surveyed, had provided usable responses.

Response to the Survey

Public universities had the highest response rate (95 percent), followed by institutions enrolling more than 10,000 FTE undergraduates (94 percent). Colleges and universities in the East and private four-year colleges had the lowest response rates (81 percent and 82 percent, respectively).

Table B-1: Comparison of Respondents and Nonrespondents

Characteristic	Respondents (N=384)	Nonrespondents (N=54)	Response Rate
Total	100.0	100.0	87.7
Control			
Public	64.6	55.6	89.2
Private	35.4	44.4	85.0
Full type			
Public university	26.6	9.3	95.3
Private university	13.3	11.1	89.5
Public four-year college	38.0	46.3	85.4
Private four-year college	22.1	33.3	82.5
Census region			
East	21.9	40.0	80.8
Midwest	28.4	16.0	93.2
South	32.3	34.0	87.9
West	17.4	10.0	93.1
Undergraduate FTE enrollment			
1,000 or less	9.4	11.1	85.7
1,001-4,999	38.0	53.7	83.4
5,000-9,999	28.1	24.1	89.3
10,000 or more	24.5	11.1	94.0
Graduate FTE			
200 or less	26.6	37.0	83.6
201-1,000	37.0	31.5	89.3
1,001-3,000	27.9	24.1	89.2
More than 3,000	8.6	7.4	89.2

Weighting

Statistical adjustment of survey responses to develop national estimates was accomplished in two stages. The first stage adjusted for institutional nonresponse within the eligible sample. Each data item was weighted within each stratification cell, by the ratio of the number of institutions in the Panel to the number of institutions that responded to the survey item. The second stage adjusted the sample data to represent the entire population.

Weights were computed on the assumption that within each stratification cell, institutions with teacher education programs in the Panel were representative of those in the entire population. That is, if 75 percent of the Panel institutions in a particular cell offered teacher preparation, it was assumed that 75 percent of all institutions in that particular cell offered teacher preparation.

Weights were derived separately to allow for differential item response. The resulting cell and item weights were applied to the responses of each institution, and the weighted data were then aggregated into the broad institutional categories used in the survey analysis.

Two separate populations were used in weighting the survey responses: For data items related to bachelor's-level teachers, institutions which award the B.A. degree were used. For data items related to master's-level teachers, the population was limited to institutions which award an advanced degree.

Survey Population

A survey population was estimated because of the inconsistencies between the available listings of institutions that provide teacher training. Some institutions listed in the Education Directory as offering teacher preparation were excluded from the listing of earned degrees in education (131, 10 percent); some contained in the latter listing were omitted from the former (54, 4 percent). Moreover, a later comparison indicated that some institutions that responded to the HEP survey and reported having new teachers were omitted from one or both sources (14, 4 percent).

At the request of the survey sponsor, we conducted a simple analysis of the appropriateness of the Panel design to this survey and, further, of the validity of the assumption that institutions with teacher education programs in the Panel were representative of those in the entire population. This analysis consisted of comparing a known variable--earned degrees conferred in education--with the estimate of that variable obtained by using the Panel survey design. Education degrees awarded by all Panel members were aggregated, separately by stratification cell and by degree level. The net Panel weights (the number of population institutions divided by the number of Panel institutions) for each cell were applied to the aggregates, creating population estimates of earned degrees conferred in education. When compared to the known count of education degrees conferred, the estimates came well within tolerable limits: the estimate of BA degrees was 0.1 percent below the actual, and the estimate of MA degrees was 3.7 percent above the actual.

Reliability of the Estimates

Since the statistics presented in this report are based on a sample, they will differ somewhat from the figures which would have been obtained if a complete census had been taken using the same survey instrument, instructions, and procedures. As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into the survey procedures.

The standard error is primarily a measure of sampling variability; that is, the variations that might occur by chance because only a sample of the institutions is surveyed. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; and 95 out of 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus,

knowing the standard error permits us to specify with a stated confidence the range within which a given percentage would lie if a complete census, rather than a sample survey, had been conducted.

Tables B-2 and B-3 present 90 percent confidence intervals for survey estimates representing all institutions.

Table B-2: Bachelor's Recipients Newly Qualified to Teach, By Specialty Field, 1977-78 and 1978-79: Population Estimates and 90 Percent Confidence Intervals

Teaching Specialty	1977-78 Estimate	1977-78 Confidence Interval (+ or -)	1978-79 Estimate	1978-79 Confidence Interval (+ or -)	% Change	Confidence Interval of % Change (+ or -)
Elementary Education						
Early childhood education	12,324	2,734	12,432	2,731	+.9	5.9
Elementary education	55,801	2,465	53,982	2,929	-3.3	2.1
Other elementary	854	449	814	399	-4.7	21.9
Subject Areas						
Art	6,209	643	5,785	444	-6.8	3.6
Bilingual	825	363	1,209	732	+46.5	26.2
Business (nonvocational)	5,054	1,413	5,260	1,242	+4.1	9.2
English language arts	10,835	545	9,957	514	-8.1	3.5
Foreign languages	3,452	261	3,153	136	-8.7	4.7
Gifted and talented	120	*	126	7	+5.0	*
Health, physical education, recreation	22,842	2,642	22,526	3,025	-1.4	3.5
Men	(12,415)	(1,267)	(11,994)	(1,494)	(-3.4)	4.6
Women	(10,427)	(1,643)	(10,532)	(1,603)	(+1.0)	3.5
Home economics (nonvocational)	2,986	387	2,885	413	-3.4	1.5
Industrial arts (nonvocational)	3,626	1,279	3,534	1,342	-2.5	5.0
Mathematics	4,435	386	4,039	436	-8.9	7.1
Music	9,119	1,171	9,258	1,275	+1.5	4.6
Natural and physical sciences						
Physics	270	56	299	35	+10.7	14.9
Chemistry	681	87	661	153	-2.9	15.8
Biology	3,927	514	3,901	566	-.7	7.1
Geology, earth sciences	537	68	478	51	-11.0	4.8
Other, including general, science	1,313	216	1,214	168	-7.5	10.1
Reading	1,376	278	1,590	146	+15.6	15.4
Social sciences	13,056	1,250	12,971	902	-.7	5.1
Other subjects	223	46	204	26	-8.5	10.7
Vocational Education						
Agriculture	1,571	125	1,532	125	-2.5	0.3
Distributive education	500	37	460	90	-8.0	11.8
Health occupations	346	171	366	202	+5.8	3.5
Occupational home economics	1,745	194	1,690	123	-3.2	4.4
Office occupations	586	23	631	21	+7.7	0.9
Technical education	538	128	537	128	-.2	0.5
Trade and industry	768	7	819	7	+6.6	0.2
Special Education						
Comprehensive special education	6,506	1,190	6,952	1,431	+6.9	5.7
Emotionally disturbed	1,625	202	1,624	145	-.1	4.6
Learning disabled	3,196	687	3,214	409	+.6	12.8
Mentally retarded	6,228	762	5,604	439	-10.0	5.7
Orthopedically handicapped	428	133	469	162	+9.6	8.6
Speech impaired	2,287	156	2,152	178	-5.9	2.7
Hearing impaired	1,016	141	1,005	142	-1.1	3.4
Visually handicapped	222	70	203	70	-8.6	2.6
Other special education	515	*	483	30	-6.2	*

*Confidence interval not measurable.

Table B-3: Master's Recipients Newly Qualified to Teach, 1977-78 and 1978-79: Population Estimates and 90 Percent Confidence Intervals

Teaching Specialty	1977-78 Estimate	1977-78 Confidence Interval (+ or -)	1978-79 Estimate	1978-79 Confidence Interval (+ or -)	% Change	Confidence Interval of % Change (+ or -)
Special Education	7,076	718	6,613	1,040	-6.5	9.5
All Other Fields	22,217	2,744	20,073	2,808	-9.7	3.6

Comparisons with other Survey Data

Readers should be strongly cautioned against comparing the findings from the separate studies conducted by the National Education Association, the National Center for Education Statistics, and the Higher Education Panel. Their respective methodologies, definitions, and populations differ so significantly as to prevent reasonable comparisons.

NEA annually surveys the universe of colleges and universities offering teacher preparation programs, principally through cooperation with state education agencies. In states where no agency cooperates in the survey (approximately ten states), NEA surveys the institutions directly. No weighting techniques are employed, and no imputations are made for nonresponse. The 1978 NEA survey, recently published, reported 12 percent fewer newly qualified teachers than the HEP survey for the same year.

The Recent College Graduate Survey conducted by NCES was based on a sample of college graduates (1974-75 in one study, 1976-77 in a more recent study) from a sample of all colleges and universities. Survey findings were weighted to national estimates using ratio estimation procedures. Findings from the 1974-75 NCES survey are not comparable with findings from the 1976-77 NCES survey because of changes in definitions. Further, the NCES surveys excluded certain kinds of teachers who were included in the HEP survey, notably those who had received their degrees any time before they became qualified to teach.

The HEP survey queried more than four hundred institutions with teacher education programs. Results were institutionally weighted to represent a population of 1,252

institutions that award a bachelor's degree and 792 institutions that award an advanced degree.

Given the known differences in survey methodologies and definitions, and the unknown differences in survey populations, direct comparisons among the three surveys cannot and should not be made.

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American Council on Education

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Atelsek, Frank J. and Gomberg, Irene L. **Young Doctorate Faculty in Selected Science and Engineering Departments, 1975 to 1980.** Higher Education Panel Report, No. 30, August, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **Energy Costs and Energy Conservation Programs in Colleges and Universities: 1972-73 and 1974-75.** Higher Education Panel Report, No. 31, April, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Foreign Area Research Support Within Organized Research Centers at Selected Universities, FY 1972 and 1976.** Higher Education Panel Report, No. 32, December, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **College and University Services for Older Adults.** Higher Education Panel Report, No. 33, February, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Production of Doctorates in the Biosciences, 1975-1980: An Experimental Forecast.** Higher Education Panel Report, No. 34, November 1977.

Gomberg, Irene L. and Atelsek, Frank J. **Composition of College and University Governing Boards.** Higher Education Panel Report, No. 35, August, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Estimated Number of Student Aid Recipients, 1976-77.** Higher Education Panel Report, No. 36, September, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **International Scientific Activities at Selected Institutions, 1975-76 and 1976-77,** Higher Education Panel Report, No. 37, January, 1978.

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Atelsek, Frank J. and Gomberg, Irene L. **The Institutional Share of Undergraduate Financial Assistance, 1976-77,** Higher Education Panel Report, No. 42, May 1979.

Atelsek, Frank J. and Gomberg, Irene L. **Young Doctoral Faculty in Science and Engineering: Trends in Composition and Research Activity,** Higher Education Panel Report, No. 43, February 1979.

Atelsek, Frank J. and Gomberg, Irene L. **Shared Use of Scientific Equipment at Colleges and Universities, Fall 1978,** Higher Education Panel Report, No. 44, November 1979.

Single copies of the above reports may be obtained from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D. C. 20036.

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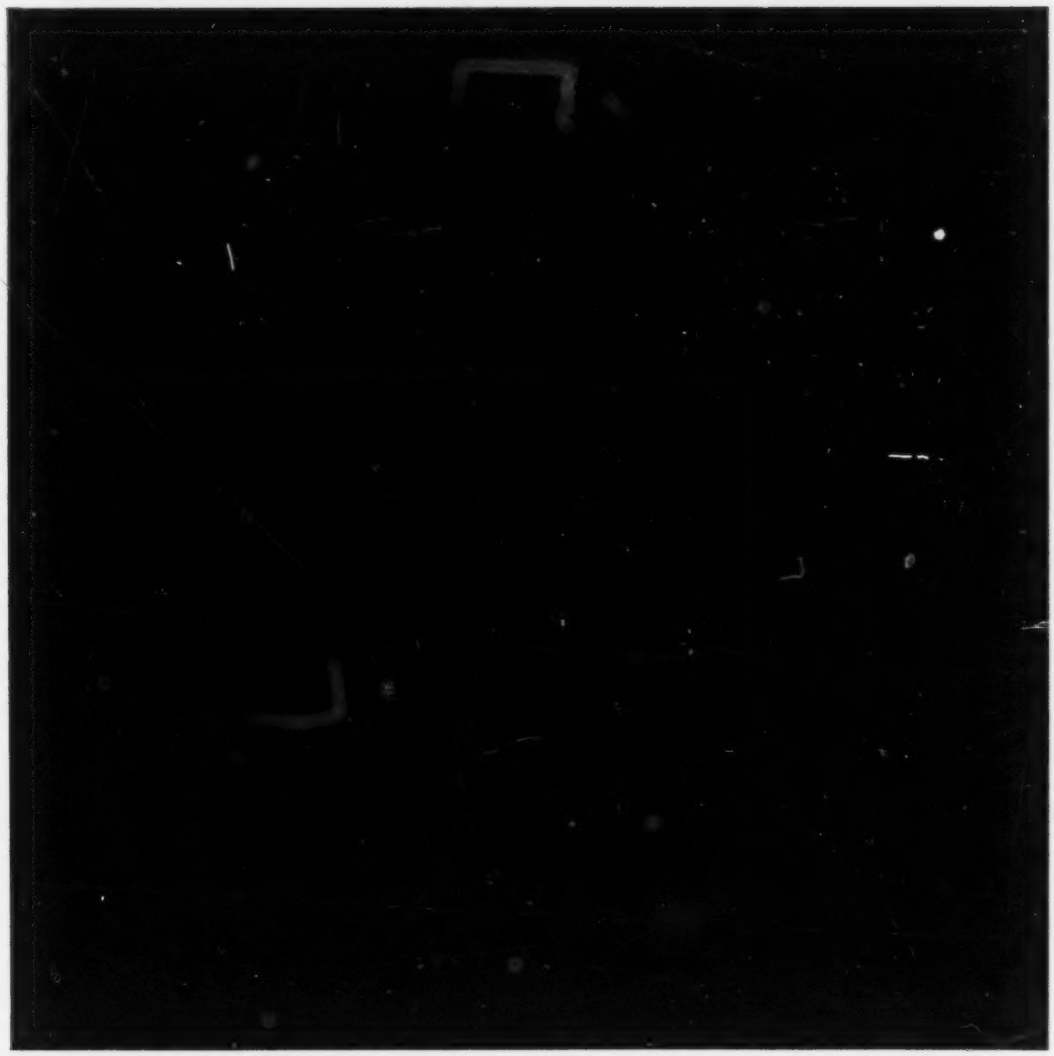
Refund Policies and Practices of Colleges and Universities

Frank J. Atelsek and Irene L. Gomberg



HIGHER EDUCATION PANEL REPORT, NUMBER 46
AMERICAN COUNCIL ON EDUCATION

FEBRUARY
1980

A Survey Funded by the National Science Foundation, the U. S. Office of Education, and the National Endowment for the Humanities

AMERICAN COUNCIL ON EDUCATION

J. W. Peltason, *President*

The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under contract support provided jointly by the National Science Foundation, the National Endowment for the Humanities, and the U. S. Office of Education (NSF Contract SRS-78-16385).

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Refund Policies and Practices of Colleges and Universities

Frank J. Atelsek
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Higher Education Panel Reports

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Any opinions, findings, and conclusions or recommendations are those of the authors and do not necessarily reflect the views of the sponsoring agencies.

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Highlights

Refunds at the Average Institution

- About 81 percent of tuition is refunded if the student withdraws immediately after classes begin. Tuition refunds are generally not available after one-third of the term has passed.
- Approximately 46 percent of mandatory fees are refundable after the first day of the term. Refunds of fees are available only into one-sixth of the term.
- Fifty-four percent of room charges and 83 percent of board charges may be refunded if a student withdraws after the first day of the term.
- Room refunds are available until the term is two-fifths over, and board refunds are available almost three-quarters into the term.

Policies and Procedures

- As of winter 1979, tuition refund policies had been reviewed less than one year ago at 37 percent of colleges and universities; at one-fifth of all institutions, reviews had been made five or more years ago.
- Governing boards have the primary responsibility for setting or revising tuition refund policies at 53 percent of public institutions.
- In private institutions, 39 percent reported that these responsibilities were held by the college president, and in 30 percent of the cases it was held by the governing board.
- At almost all institutions, tuition refund policy is described in the catalogue. In addition, one-fourth of institutions make notification of refund policies prior to registration; one-fourth give such notification upon registration.
- The average interval between applying for a refund and receiving it is 2.5 weeks.
- Two-thirds of public institutions and three-fifths of private institutions have established procedures for appealing unfavorable refund decisions.
- Of the first-time full-time freshmen enrolled in fall 1978, about 8 percent at public institutions and 3 percent at private institutions withdrew before the end of the term and were eligible for tuition refunds.

Background

This survey provides information about refund policies at universities and four- and two-year colleges. The focus is on such policies regarding freshmen students who terminate their studies before completing their first term. Information was gathered about the operation of the refund systems: How refunded amounts change throughout the term; differences in the amounts of refund for tuition, mandatory fees, and room and board charges; how many freshmen were due or received refunds during the 1978 fall term; how long it takes to process the refunds; and whether unfavorable refund decisions could be appealed by the student. Questions were also asked about how refund policies are publicized, who sets the policies, and how and when these were last reviewed.

Data on refund policies are relatively scarce. Most information gathered previously has been drawn from examinations of refund policies as stated in college catalogues. This survey should offer a broader, more definitive view of refund policies than has been available to date.

A self-regulation initiative in the form of policy guidelines for refund of student charges was recently developed by a committee of the National Association of College and University Business Officers. These guidelines were formally endorsed by fourteen national education associations and, in October 1979, were distributed among the nation's colleges and universities. It should be noted that the data collection for this HEP survey predated the dissemination of the guidelines for self-regulation initiative.

Methods Summary

The Higher Education Panel is an ongoing survey research program created in 1971 by the American Council on Education to conduct specialized surveys on topics of current policy interest to the higher education community and to government agencies.

The Panel is a stratified sample of 760 colleges and universities drawn from the more than 3,000 institutions listed in the National Center for Education Statistics' Education Directory. All institutions in this population are grouped by the variables

constituting the Panel's stratification design, based primarily on type (university, four-year college, two-year college), control (public, private), and size (full-time-equivalent enrollment). For any given survey either the entire Panel or an appropriate subset of institutions is used.

The survey instrument (Appendix A) was mailed February 2, 1979, to all Panel institutions except independent medical colleges. Later removed from the sample were institutions with no undergraduate students and institutions that in the fall of 1978 charged less than $100 for in-state tuition and fees. Of the resulting survey group of 636 institutions, usable responses were received from 580, or 91 percent, after mail and telephone follow-up had been completed.

The data from responding institutions were statistically adjusted to represent the population of colleges and universities that enroll undergraduates. Weights were computed, within each stratification cell, by the ratio of the number of institutions in the population to the number of institutions that responded to the survey item. Weights were derived separately to allow for the varying numbers of responses to each questionnaire item. The resulting cell and item weights were applied to the responses of each institution, and the weighted data were then aggregated into the broad institutional categories used in the analyses. All data represent independently computed population estimates. Because each data element was weighted separately, subtotals generally approximate, but may not add exactly to, their corresponding totals.

Appendix B compares respondents and nonrespondents and describes the stratification design for weighting. Appendix C discusses the reliability of the survey estimates and presents 90 percent confidence limits.

Findings

The survey respondents were asked to separately detail their refund policies for first-time full-time freshmen students entering fall 1978 covering tuition, mandatory

fees, room, and board.[1] The respondents listed the amounts of these charges and the percentage refund that would be available for each: 1) after the first day of the term, 2) during the last day of the second week, and 3) during the last week in which refunds could be obtained.

Differences in Refund for Specific Charges

As expected, the proportion of money refunded varies according to the type of fee and the time of withdrawal during the term. (See tables 1-3).

Tuition. On average, about 81 percent of tuition charges are refundable if the student withdraws immediately after classes begin. The average refund drops to 69 percent by the last day of the second week of classes and to 28 percent during the last week in which any refund is available. Typically, tuition refunds are not available after one-third of the term has passed.

Mandatory Fees. Refunds of mandatory fees are more restricted. On the average, less than half (46 percent) of the amount of these fees is refundable after the first day of the term. After one-sixth of the term has passed, the average institution allows no refund of mandatory fees. In the week prior to refund cutoff, the proportion of mandatory fees that is refundable is down to less than one-fifth of the initial charge.

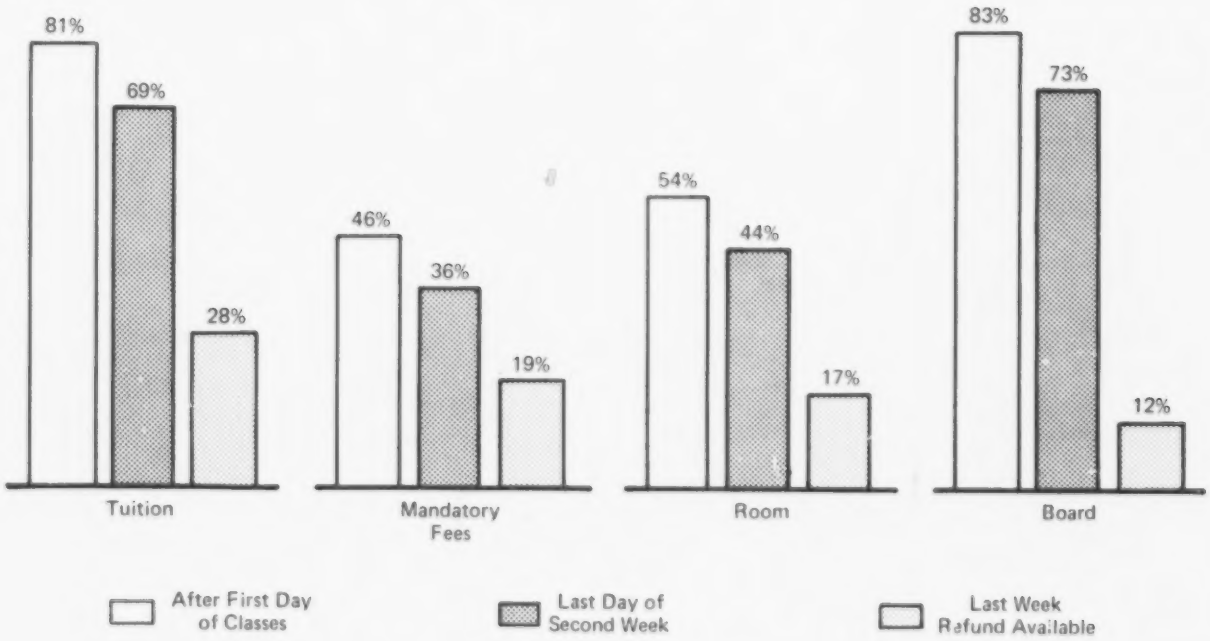
Room. Usually some proportion of the room charge is refundable during the first two-fifths of the term. The mean percentage refund declines from a high of 54 percent just after the term begins to 17 percent during the last week in which room refunds are available.

Board. Refunds of board charges are available well into the term--until almost three-quarters of the term is over. The average percentage refund for board ranges from 83 percent at the very beginning of the term to 12 percent during the last week in which a refund is available.

---

[1] Mandatory fees included matriculation fees in addition to other one-term charges. If room and board charges varied, respondents reported the predominant or average option.

Fig. 1. Average Percentage of Charges Refundable at Specific Times During the Term, Fall 1978



Composite findings about refunds weighted to represent all institutions with undergraduate programs are summarized in figure 1.

Variations in Tuition Refund Policy

The averages expressed in figure 1 mask the wide variations in refund policy that occur among institutions. For example, during the last week in which a refund is available, some institutions refund more than three-fifths of the tuition charge while others refund 20 percent or less of the original tuition amount (tables 4-12). The proportion of the term during which a tuition refund is available also varies.[2] About one-fourth of the institutions cut off tuition refunds before 20 percent of the term has passed. At the other extreme, a few institutions (5 percent) allow some tuition refund after as much as three-fifths of the term has passed (tables 13-15). Figures 2 and 3 summarize these variations for public and private universities and four- and two-year colleges.

A more meaningful perspective of tuition refund policy is provided by examining the link between the level of refund and the point in the term at which tuition refunds are cut off. Table A below summarizes this relationship separately for public and private institutions.

Table A: Mean Percentage of Tuition Refunded According to the Last Period of the Term When a Refund is Available, Fall 1978

	Public		Private	
Period of the Term	Number of Institutions	Mean % Refund	Number of Institutions	Mean % Refund
First fifth	363	59	151	53
Second fifth	641	36	640	27
Third fifth	91	24	349	18
Fourth fifth	4	17	69	20
Last fifth	8	11	30	2

[2]This figure was computed by dividing the last week during which a refund is available by the number of weeks in the fall term.

Fig. 2. Percentage Distribution of Institutions According to the Proportion of Tuition Refunded During Last Week a Refund is Available, Fall 1978

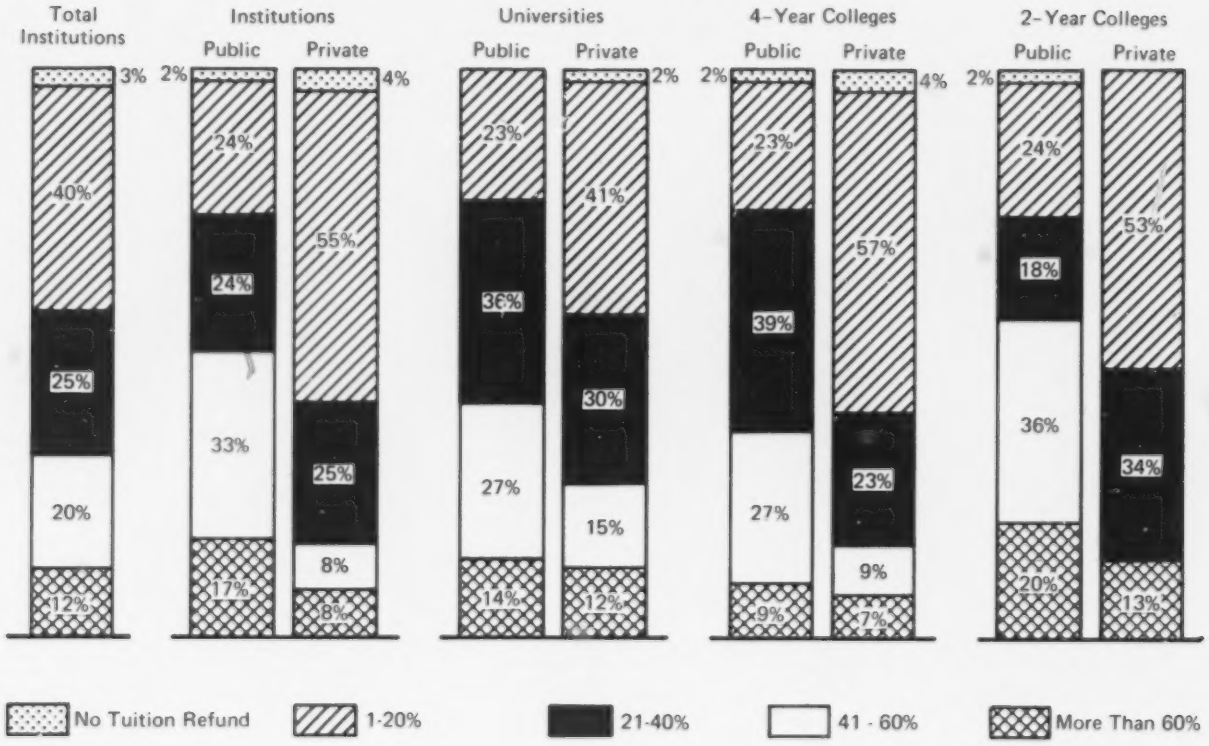
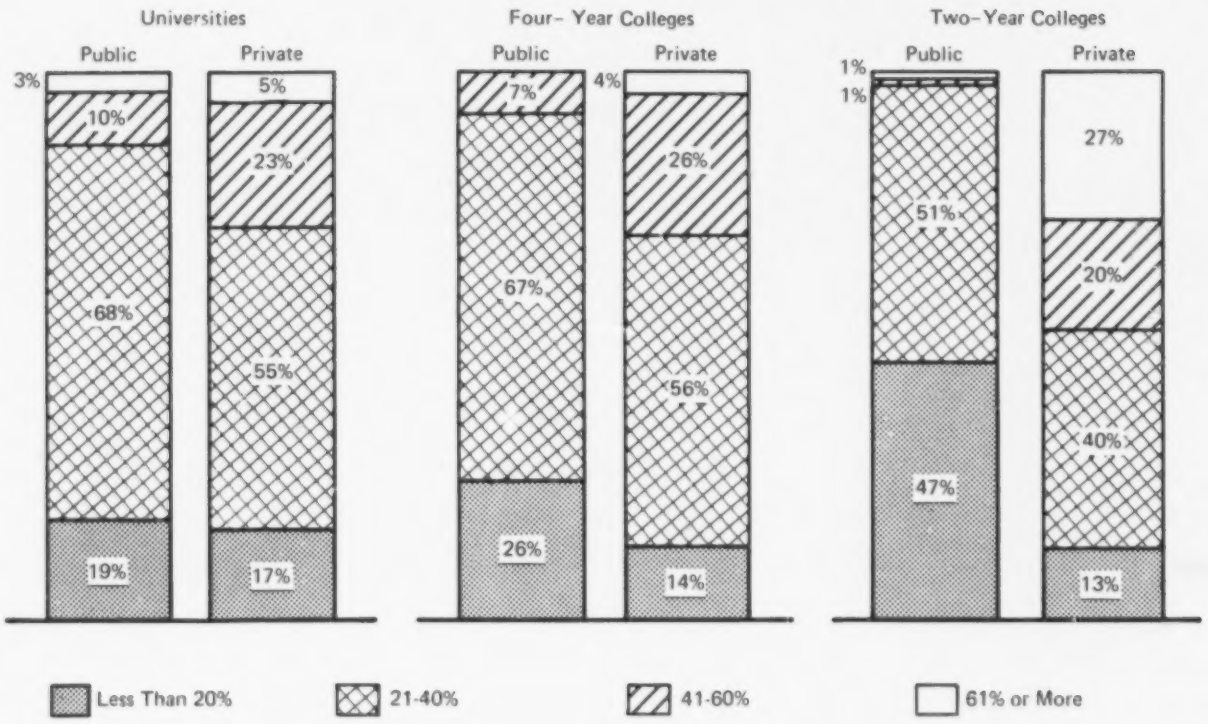


Fig. 3. Percentage Distribution of Institutions According to the Proportion of the Term During Which a Tuition Refund is Available, Fall 1978



The average (mean) public institution that allows tuition refunds only during the initial one-fifth of the term refunds about 59 percent of tuition charges to the withdrawing student. The percentage refund declines to 36 percent of tuition charges during the second fifth of the term. About 90 percent of the public institutions do not provide refunds beyond this point (the second fifth) of the term.

Tuition refunds at private institutions tend to be allowed further into the term. About 28 percent grant some refund of tuition charges during the middle one-fifth of the term and 8 percent provide refunds during the last two-fifths of the term. As suggested by table A, however, these extended periods for obtaining refunds are offset by the smaller proportions of the charges that are refundable.

Among the private institutions that extend the refund period into the fourth and final fifths of the term, the average refund is about 15 percent of the tuition charges.

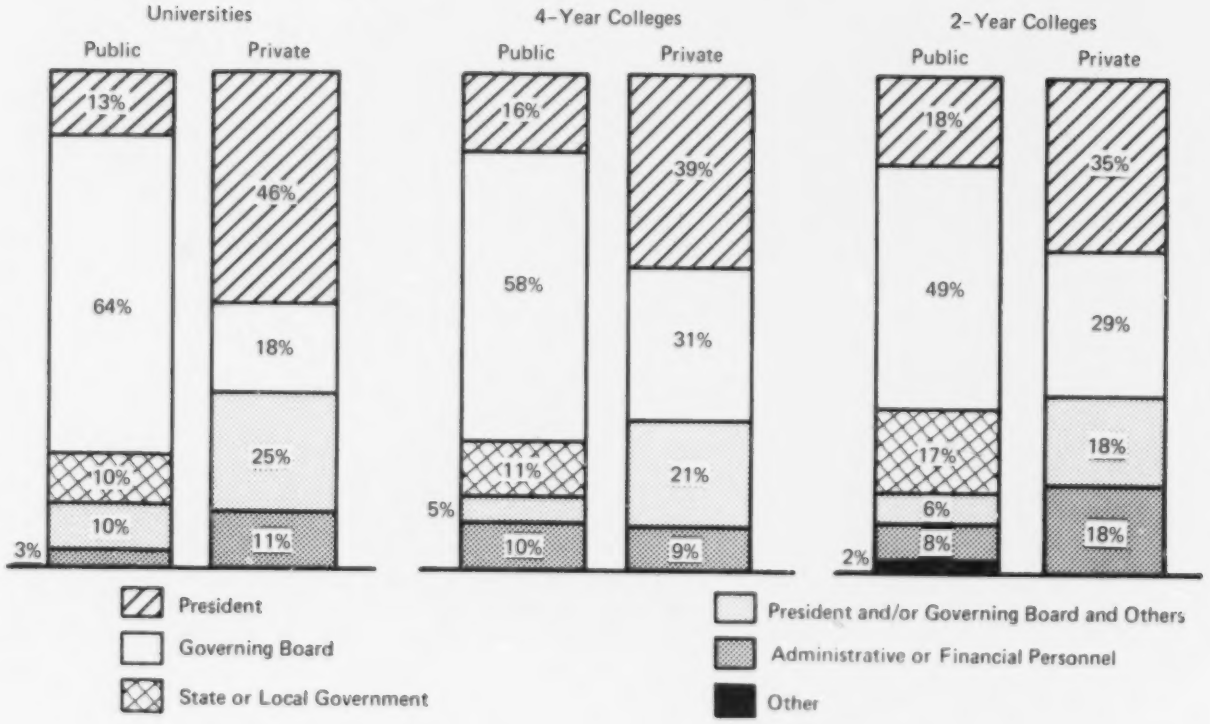
In contrast, private institutions that restrict refunds to the earlier periods of the term refund 53 percent of the tuition during the first fifth and 27 percent during the second fifth of the term. Almost two of every three private institutions limit tuition refunds to these earlier periods of their terms (See also table 16.)

Establishing Refund Policies

At most colleges and universities, the governing boards and/or presidents have the primary responsibility for refund policies (tables 17-18). At more than two-fifths of the institutions, the governing boards have primary responsibility; presidents assume this duty at 29 percent of the institutions. At almost 10 percent of the institutions, this responsibility is shared by some combination of the governing board, the president, and others. Figure 4 displays the different ways this responsibility is assigned at the universities and at four- and two-year colleges within both the public and the private sectors.

Among public institutions, the governing boards have primary responsibility for refund policy at approximately three-fifths of the universities and four-year colleges and at half of the two-year colleges. Presidents take on this primary role at fewer

Fig. 4. Authority with Primary Responsibility for Tuition Refund Policy, Fall 1978

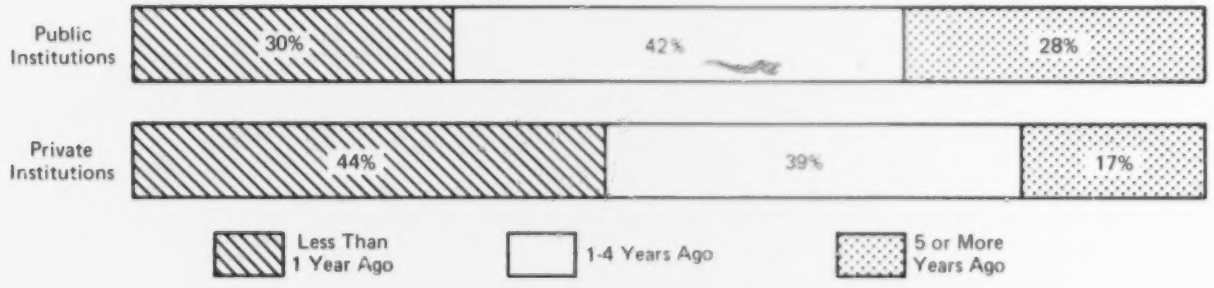


than one-fifth of public institutions. Among private institutions, however, the reverse is true. Presidents take on this policy function at roughly half of the universities, two-fifths of the four-year and one-third of the two-year colleges; the governing boards have this responsibility at about a fifth of the private universities and at roughly 30 percent of the four- and two-year colleges. The governing boards share the responsibility at private institutions with the president and others at roughly one-fifth of the universities and four-year colleges and just under one-fifth of the two-year colleges.

Review Procedures

Overall, as of winter 1979, approximately two-fifths of the colleges and universities reported that tuition refund policies were reviewed less than one year previously. An additional two-fifths had such reviews from one to five years previously and the remainder (22 percent) had their refund policies reviewed five or more years ago. As shown in figure 5, private institutions tend to have had more recent reviews of their refund policies than public institutions.

Fig. 5. Time of Most Recent Refund Policy Review



Who Reviews Refund Policies

At most institutions, governing boards and presidents are the predominant participants in the reviews of refund policies (60 and 69 percent, respectively). In rank order of frequency, other participants include administrative personnel (27 percent), financial personnel (21 percent), faculty (18 percent), state or local governments (10 percent), students (10 percent), and accrediting bodies (3 percent). Differences in participation at public and private institutions are summarized in table B below.

Table B: Participants in Refund Policy Review

	Public Institutions %	Private Institutions %
Governing board	71	50
President	62	75
Faculty	18	18
Administrative personnel	19	34
Financial personnel	12	29
Students	12	8
State or local governments	21	1
Accrediting body	3	2

Communicating Refund Policy

The survey included two questions about how entering freshmen students and parents are informed of tuition refund policies and procedures: At almost all institutions, both public and private, tuition refund policy is described in the catalogue (table 19). In addition, more than one-fourth of the institutions make notification of refund policies prior to registration and one-fourth give such notification at registration. Thirty-one percent of the institutions also reported that a statement of refund policy is available upon request. It should be noted, however, that very few institutions (less than 1 percent) limit their disclosure of refund policy only to those who specifically request it without having some other form of refund policy information also at hand.

The catalogue is also the major means of providing information to students or parents on procedures for obtaining tuition refunds. More than four-fifths of the institutions use the catalogue for this purpose. In addition, one-fifth of the institutions provide this information prior to registration, one-fifth at registration, and half at the time of withdrawal. Two percent report that information about refund procedures is available only upon request. Differences in the use of these means of communicating tuition refund policies and procedures are presented for public and private universities and four-year and two-year colleges in table 20.

Freshman Withdrawals

For the final area of inquiry, respondents were asked to report: (1) how many full-time freshmen withdrew early enough in the term to be eligible for a tuition refund, (2) how long it usually takes to receive a refund after applying for one, and (3) whether there is an established procedure for appealing unfavorable refund decisions.

Of the 1,624,000 full-time freshmen enrolled in fall 1978, about 6 percent withdrew before the end of the term and were eligible to receive some refund of tuition charges (table 21). The percentage of eligible withdrawing freshmen was higher at public than at private institutions (8 percent vs. 3 percent). In both the public and private sectors, the two-year colleges reported above-average rates of early withdrawal among freshmen. This higher withdrawal rate was particularly evident at public two-year colleges, where 11 percent of the freshmen withdrew early enough in the term to receive some refund of tuition charges.

At the average institution, there was a two-and-one-half week interval between the time a student applied for and received a refund. This interval was somewhat longer at public than at private institutions (3.2 weeks and 1.8 weeks, respectively).

Overall, 64 percent of the institutions covered in the survey have an established procedure for appealing unfavorable refund decisions. Appeal procedures were reported most frequently by public universities (74 percent) and least frequently by private four-year colleges (58 percent).

Basic Report Tables

Table 1

Mean Institutional Refund Policies for First-Time Full-Time Freshmen, Fall 1978, by Institutional Control

Item	Number of Institutions with Charge	1978 Fall Term Charge	Percentage Refund After First Day of Term	Percentage Refund During Last Day of Second Week of Classes	Percentage Refund During Last Week Refund is Available	Percentage into Term Refund is Available *
			ALL INSTITUTIONS			
Tuition	2,346	$ 718	80.6	68.9	27.5	31
Mandatory Fees	2,029	66	45.6	35.6	18.9	14
Room	1,608	319	54.4	44.1	17.0	39
Board	1,455	399	82.9	73.2	11.8	72
Tuition & Fees	151	1,268	73.2	59.4	18.0	29
Room & Board	171	705	79.5	70.1	10.9	76
			PUBLIC INSTITUTIONS			
Tuition	1,107	$ 210	81.5	63.0	40.8	26
Mandatory Fees	943	54	51.9	42.0	26.0	12
Room	478	286	68.1	59.1	16.8	52
Board	438	342	85.0	76.1	11.8	75
Tuition & Fees	25	204	81.4	63.3	35.3	31
Room & Board	85	649	81.0	69.7	10.1	77
			PRIVATE INSTITUTIONS			
Tuition	1,239	$1,187	80.5	69.9	25.3	36
Mandatory Fees	1,086	76	41.5	31.4	14.3	15
Room	1,130	333	49.2	38.3	17.0	33
Board	1,017	424	82.2	72.2	11.9	70
Tuition & Fees	126	1,502	73.0	59.3	17.5	28
Room & Board	86	760	78.3	70.5	11.6	75

*Obtained by dividing last week refund is available by length of fall term.

Table 2

Mean Institutional Refund Policies for First-Time Full-Time Freshmen, Fall 1978: Public Institutions

Item	Number of Institutions with Charge	1978 Fall Term Charge	Percentage Refund After First Day of Term	Percentage Refund During Last Day of Second Week of Classes	Percentage Refund During Last Week Refund is Available	Percentage into Term Refund is Available*
PUBLIC UNIVERSITIES						
Tuition	91	$301	88.5	71.9	45.1	31
Mandatory Fees	84	112	75.2	68.0	34.1	26
Room	77	337	73.7	65.2	13.0	58
Board	73	368	87.5	76.8	8.6	79
Tuition & Fees	5	298	85.8	67.8	31.5	30
Room & Board	26	738	75.7	61.8	11.2	62
PUBLIC FOUR-YEAR COLLEGES						
Tuition	284	$261	83.5	64.7	39.4	28
Mandatory Fees	247	83	66.1	53.8	32.9	19
Room	251	314	66.5	56.0	21.0	48
Board	232	339	84.4	75.1	14.3	72
Tuition & Fees	15	195	79.7	62.0	40.4	31
Room & Board	30	708	86.9	75.8	13.6	82
PUBLIC TWO-YEAR COLLEGES						
Tuition	732	$177	78.8	60.0	40.7	24
Mandatory Fees	612	33	25.9	17.3	14.7	7
Room	150	207	67.7	62.8	7.9	56
Board	133	334	84.6	77.5	8.5	79
Tuition & Fees	5	144	80.0	60.0	20.0	33
Room & Board	29	495	78.2	70.2	2.7	86

*Obtained by dividing last week refund is available by length of fall term.

Table 3

Mean Institutional Refund Policies for First-Time Full-Time Freshmen, Fall 1978: Private Institutions

Item	Number of Institutions with Charge	1978 Fall Term Charge	Percentage Refund After First Day of Term	Percentage Refund During Last Day of Second Week of Classes	Percentage Refund During Last Week Refund is Available	Percentage into Term Refund is Available *
PRIVATE UNIVERSITIES						
Tuition	60	$1,805	85.9	73.3	32.5	35
Mandatory Fees	47	89	53.3	38.4	28.2	16
Room	52	512	58.2	44.0	18.5	39
Board	50	491	86.8	75.7	10.1	80
Tuition & Fees	5	1,706	90.9	75.4	28.3	38
Room & Board	11	903	92.7	81.7	18.9	64
PRIVATE FOUR-YEAR COLLEGES						
Tuition	969	$1,219	80.2	70.6	25.4	34
Mandatory Fees	871	75	37.2	28.3	13.7	13
Room	896	333	47.6	36.9	17.5	32
Board	813	433	80.9	71.8	11.6	71
Tuition & Fees	93	1,653	68.9	54.7	16.4	25
Room & Board	61	665	76.2	69.0	13.6	72
PRIVATE TWO-YEAR COLLEGES						
Tuition	210	$ 853	78.8	63.2	20.4	46
Mandatory Fees	168	80	58.8	44.8	12.5	24
Room	182	281	53.6	43.7	13.3	36
Board	154	356	88.7	73.3	14.9	63
Tuition & Fees	28	960	90.6	80.0	20.0	36
Room & Board	**	--	--	--	--	--

*Obtained by dividing last week refund is available by length of fall term.
**Level of response too low for detail to be shown.

Table 4

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

All Institutions

Percentage Refund	Tuition (N=2,346)	Mandatory Fees (N=2,029)	Room (N=1,608)	Board (N=1,455)	Tuition & Fees (N=151)	Room & Board (N=171)
			AFTER THE FIRST DAY			
0	2.9	58.0	31.5	6.2	15.9	5.3
1-20	0	.1	0	0	0	0
21-40	.6	.1	.9	.5	0	0
41-60	4.6	2.8	6.2	3.0	0	4.1
61-80	47.7	15.8	20.3	14.3	57.6	40.9
81-100	44.2	23.3	41.2	76.0	26.5	49.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
			DURING THE LAST WEEK			
0	2.9	58.0	32.0	6.2	15.9	5.3
1-20	40.5	17.0	42.1	77.7	69.5	70.8
21-40	24.8	7.6	9.8	10.2	2.6	19.3
41-60	19.7	9.3	9.1	4.3	11.9	3.5
61-80	7.1	2.8	3.1	1.6	0	.6
81-100	5.2	5.3	3.9	.1	0	.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 5

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Public Institutions

Percentage Refund	Tuition (N=1,107)	Mandatory Fees (N=943)	Room (N=478)	Board (N=438)	Tuition & Fees (N=25)	Room & Board (N=85)
AFTER THE FIRST DAY						
0	2.0	56.4	22.6	7.3	4.0	7.1
1-20	0	.1	0	0	0	0
21-40	0	.1	0	0	0	0
41-60	6.3	2.6	4.8	2.3	0	8.2
61-80	53.8	18.0	24.7	14.6	36.0	9.4
81-100	37.9	22.8	47.9	75.8	60.0	75.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	2.0	56.4	22.8	7.3	4.0	7.1
1-20	23.8	8.8	55.0	80.1	28.0	77.6
21-40	24.5	11.2	9.4	6.8	12.0	10.6
41-60	33.0	12.5	10.0	3.2	56.0	3.5
61-80	10.7	3.6	1.7	2.3	0	0
81-100	6.2	7.4	1.1	.2	0	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 6

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of charge:

Private Institutions

Percentage Refund	Tuition (N=1,239)	Mandatory Fees (N=1,086)	Room (N=1,130)	Board (N=1,017)	Tuition & Fees (N=126)	Room & Board (N=86)
AFTER THE FIRST DAY						
0	3.6	59.3	35.2	5.8	18.2	3.5
1-20	0	0	0	0	0	0
21-40	1.1	0	1.2	.7	0	0
41-60	3.1	3.1	6.7	3.3	0	0
61-80	42.4	13.9	18.5	14.2	61.9	72.1
81-100	49.8	23.7	38.3	76.0	19.8	24.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	3.6	59.3	35.8	5.8	18.2	3.5
1-20	55.4	24.2	36.6	76.6	77.8	64.0
21-40	25.0	4.5	9.9	11.6	.8	27.9
41-60	7.8	6.4	8.8	4.7	3.2	3.5
61-80	3.9	2.0	3.7	1.3	0	1.2
81-100	4.3	3.5	5.1	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 7

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Public Universities

Percentage Refund	Tuition (N=91)	Mandatory Fees (N=84)	Room (N=77)	Board (N=73)	Tuition & Fees (N=5)	Room & Board (N=26)
AFTER THE FIRST DAY						
0	0	22.6	15.6	5.5	0	19.2
1-20	0	1.2	0	0	0	0
21-40	0	0	0	0	0	0
41-60	2.2	3.6	5.2	1.4	0	0
61-80	41.8	40.5	23.4	15.1	60.0	23.1
81-100	56.0	32.2	55.8	78.1	40.0	57.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	0	22.6	16.9	5.5	0	19.2
1-20	23.1	21.4	68.8	89.0	40.0	65.4
21-40	36.3	25.0	5.2	2.7	20.0	7.7
41-60	26.4	20.2	5.2	0	40.0	3.8
61-80	3.3	4.8	1.3	1.4	0	0
81-100	11.0	6.0	2.6	1.4	0	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 8

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Private Universities

Percentage Refund	Tuition (N=60)	Mandatory Fees (N=47)	Room (N=52)	Board (N=50)	Tuition & Fees (N=5)	Room & Board (N=11)
AFTER THE FIRST DAY						
0	1.7	53.2	30.8	6.0	0	0
1-20	0	0	0	0	0	0
21-40	0	0	0	0	0	0
41-60	3.3	2.1	7.7	2.0	0	0
61-80	28.3	8.5	26.9	16.0	20.0	9.1
81-100	66.7	36.2	34.6	76.0	80.0	90.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	1.7	53.2	30.8	6.0	0	0
1-20	41.7	10.6	46.2	82.0	60.0	81.8
21-40	30.0	10.6	7.7	10.0	20.0	9.1
41-60	15.0	10.6	5.8	2.0	20.0	0
61-80	5.0	2.1	5.8	0	0	9.1
81-100	6.7	12.8	3.8	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 9

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Public Four-Year Colleges

Percentage Refund	Tuition (N=284)	Mandatory Fees (N=247)	Room (N=251)	Board (N-232)	Tuition & Fees (N=15)	Room & Board (N=30)
AFTER THE FIRST DAY						
0	1.8	32.4	21.9	6.9	6.7	3.3
1-20	0	0	0	0	0	0
21-40	0	.4	0	0	0	0
41-60	3.2	1.6	7.6	3.9	0	6.7
61-80	51.1	29.2	23.5	15.5	6.7	6.7
81-100	44.0	36.4	47.0	73.7	S6.7	83.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	1.8	32.4	21.9	6.9	6.7	3.3
1-20	23.2	15.0	45.0	71.1	0	66.7
21-40	39.1	25.9	11.6	12.1	13.3	23.3
41-60	27.1	14.2	17.5	6.0	80.0	6.7
61-80	4.9	5.7	2.8	3.9	0	0
81-100	3.9	6.9	1.2	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 10

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Private Four-Year Colleges

Percentage Refund	Tuition (N=960)	Mandatory Fees (N=871)	Room (N=896)	Board (N=813)	Tuition & Fees (N=93)	Room & Board (N=61)
			AFTER THE FIRST DAY			
0	4.5	63.0	36.4	6.9	24.7	4.9
1-20	0	0	0	0	0	0
21-40	0	0	1.6	.9	0	0
41-60	5.7	3.8	8.0	4.1	0	0
61-80	40.9	8.8	15.5	9.8	67.7	77.1
81-100	50.9	24.3	38.5	78.4	7.5	18.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
			DURING THE LAST WEEK			
0	4.5	63.0	37.2	6.9	24.7	4.9
1-20	56.8	21.6	34.2	75.3	72.1	52.5
21-40	22.9	5.0	8.9	12.2	0	37.7
41-60	9.0	5.9	9.2	4.1	3.2	4.9
61-80	1.7	.8	4.4	1.6	0	0
81-100	5.1	3.7	6.2	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 11

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Public Two-Year Colleges

Percentage Refund	Tuition (N=732)	Mandatory Fees (N=612)	Room (N=150)	Board (N=133)	Tuition & Fees (N=5)	Room & Board (N=29)
AFTER THE FIRST DAY						
0	2.3	70.8	27.3	9.0	0	0
1-20	0	0	0	0	0	0
21-40	0	0	0	0	0	0
41-60	8.1	2.8	0	0	0	17.2
61-80	56.3	10.5	27.3	12.8	100.0	0
81-100	33.3	16.0	45.3	78.2	0	82.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
DURING THE LAST WEEK						
0	2.3	70.8	27.3	9.0	0	0
1-20	24.0	4.6	64.7	91.0	100.0	100.0
21-40	17.4	3.4	8.0	0	0	0
41-60	36.1	10.8	0	0	0	0
61-80	13.8	2.6	0	0	0	0
81-100	6.4	7.8	0	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 12

Percentage Distribution of Institutions According to the Percentage Refund Allowed (A) After the First Day of the Term and (B) During the Last Week a Refund is Available, by Type of Charge:

Private Two-Year Colleges

Percentage Refund	Tuition (N=210)	Mandatory Fees (N=168)	Room (N=182)	Board (N=154)	Tuition & Fees (N=28)	Room & Board (N=*)
AFTER THE FIRST DAY						
0	0	41.7	30.8	0	0	-
1-20	0	0	0	0	0	-
21-40	6.7	0	0	0	0	-
41-60	0	0	0	0	0	-
61-80	53.3	41.7	30.8	36.4	50.0	-
81-100	40.0	16.7	38.5	63.6	50.0	-
Total	100.0	100.0	100.0	100.0	100.0	-
DURING THE LAST WEEK						
0	0	41.7	30.8	0	0	-
1-20	53.3	41.7	46.2	81.8	100.0	-
21-40	33.3	0	15.4	9.1	0	-
41-60	0	8.3	7.7	9.1	0	-
61-80	13.3	8.3	0	0	0	-
81-100	0	0	0	0	0	-
Total	100.0	100.0	100.0	100.0	100.0	-

* Level of response too low for detail to be shown.

Table 13

Percentage Distribution of Institutions by the Percentage into the Term That a Refund is Available and the Type of Charge, by Institutional Control

Percentage into the Term*	Tuition	Mandatory Fees	Room	Board	Tuition & Fees	Room & Board
			ALL INSTITUTIONS			
0	2.9	57.7	31.5	6.2	15.9	5.3
1-20	23.0	11.6	8.3	3.6	0	.6
21-40	54.8	19.9	18.3	12.8	76.2	11.1
41-60	14.8	8.7	15.2	11.9	8.0	1.2
61-80	3.0	1.1	3.9	3.6	0	26.9
81-100	1.6	1.0	22.8	61.8	0	55.0
Total	100.0 (N=2,346)	100.0 (N=2,029)	100.0 (N=1,608)	100.0 (N=1,455)	100.0 (N=151)	100.0 (N=171)
			PUBLIC INSTITUTIONS			
0	2.0	55.9	22.6	7.3	4.0	7.1
1-20	37.1	16.4	3.8	3.4	0	1.2
21-40	56.7	24.1	17.0	11.2	92.0	4.7
41-60	3.3	3.1	13.8	5.5	4.0	2.4
61-80	.2	.2	5.4	3.0	0	27.1
81-100	.7	.3	37.4	69.6	0	57.6
Total	100.0 (N=1,107)	100.0 (N=943)	100.0 (N=478)	100.0 (N=438)	100.0 (N=25)	100.0 (N=85)
			PRIVATE INSTITUTIONS			
0	3.6	59.3	35.2	5.8	18.2	3.5
1-20	10.4	7.4	10.3	3.6	0	0
21-40	53.0	16.3	18.8	13.6	73.0	17.4
41-60	25.1	13.5	15.8	14.6	8.7	0
61-80	5.4	1.9	3.3	3.8	0	26.7
81-100	2.4	1.6	16.6	58.5	0	52.3
Total	100.0 (N=1,239)	100.0 (N=1,086)	100.0 (N=1,130)	100.0 (N=1,017)	100.0 (N=126)	100.0 (N=86)

*Obtained by dividing the last week a refund is available by the number of weeks in the fall term.

Table 14

Percentage Distribution of Institutions by the Percentage into the Term That a Refund is Available and the Type of Charge: Public Institutions

Percentage into the Term*	Tuition	Mandatory Fees	Room	Board	Tuition & Fees	Room & Board
			PUBLIC UNIVERSITIES			
0	0	22.6	15.6	5.5	0	19.2
1-20	18.7	15.5	3.9	1.4	0	3.8
21-40	68.1	46.4	15.6	9.6	100.0	15.4
41-60	9.9	11.9	14.3	2.7	0	0
61-80	2.2	2.4	7.8	8.2	0	7.7
81-100	1.1	1.2	42.8	72.6	0	53.8
Total	100.0 (N=91)	100.0 (N=84)	100.0 (N=77)	100.0 (N=73)	100.0 (N=5)	100.0 (N=26)
			PUBLIC FOUR-YEAR COLLEGES			
0	1.8	30.4	21.9	6.9	6.7	3.3
1-20	23.9	17.8	6.0	6.0	0	0
21-40	67.2	46.2	20.7	10.8	86.7	0
41-60	7.1	5.7	17.1	9.5	6.7	6.7
61-80	0	0	3.2	3.0	0	30.0
81-100	0	0	31.1	63.8	0	60.0
Total	100.0 (N=284)	100.0 (N=247)	100.0 (N=251)	100.0 (N=232)	100.0 (N=15)	100.0 (N=30)
			PUBLIC TWO-YEAR COLLEGES			
0	2.3	70.8	27.3	9.0	0	0
1-20	44.5	16.0	0	0	0	0
21-40	51.2	12.1	11.3	12.8	100.0	0
41-60	1.0	.8	8.0	0	0	0
61-80	0	0	8.0	0	0	41.4
81-100	1.0	.3	45.3	78.2	0	58.6
Total	100.0 (N=732)	100.0 (N=612)	100.0 (N=150)	100.0 (N=133)	100.0 (N=5)	100.0 (N=29)

*Obtained by dividing the last week a refund is available by the number of weeks in the fall term.

Table 15

Percentage Distribution of Institutions by the Percentage into the Term That a Refund is Available and the Type of Charge: Private Institutions

Percentage into the Term*	Tuition	Mandatory Fees	Room	Board	Tuition & Fees	Room & Board
			PRIVATE UNIVERSITIES			
0	1.7	53.2	30.8	6.0	-	0
1-20	15.0	14.9	9.6	0	-	0
21-40	55.0	21.3	19.2	8.0	-	45.4
41-60	23.3	4.3	11.5	8.0	-	0
61-80	1.7	0	5.8	6.0	-	0
81-100	3.3	6.4	23.1	72.0	-	54.5
Total	100.0 (N=60)	100.0 (N=47)	100.0 (N=52)	100.0 (N=50)	- (N=**)	100.0 (N=11)
			PRIVATE FOUR-YEAR COLLEGES			
0	4.5	63.0	36.4	6.9	24.7	4.9
1-20	9.5	6.8	10.8	2.8	0	0
21-40	55.7	14.4	14.8	11.3	64.5	16.4
41-60	26.3	13.4	19.3	14.4	10.8	0
61-80	3.9	2.4	3.8	4.4	0	37.7
81-100	0	0	14.8	60.2	0	41.0
Total	100.0 (N=969)	100.0 (N=871)	100.0 (N=896)	100.0 (N=813)	100.0 (N=93)	100.0 (N=61)
			PRIVATE TWO-YEAR COLLEGES			
0	0	41.7	30.8	0	0	-
1-20	13.3	8.3	7.7	9.1	0	-
21-40	40.0	25.0	38.5	27.3	100.0	-
41-60	20.0	16.7	0	18.2	0	-
61-80	13.3	0	0	0	0	-
81-100	13.3	8.3	23.1	45.4	0	-
Total	100.0 (N=210)	100.0 (N=168)	100.0 (N=182)	100.0 (N=154)	100.0 (N=28)	- (N=**)

* Obtained by dividing the last week a refund is available by the number of weeks in the fall term.

** Level of response too low for detail to be shown.

Table 16

Mean Percentage of Tuition Refunded During the Last Period of the Term When a Refund is Available, Fall 1978, by Control and Type of Institution

Period of the Term	Number of Institutions	Mean % Refund	Number of Institutions	Mean % Refund	Number of Institutions	Mean % Refund
	Total		Public		Private	
First quintile	514	57	363	59	151	53
Second quintile	1,281	32	641	36	640	27
Third quintile	440	20	91	24	349	18
Fourth quintile	73	20	4	17	69	20
Last quintile	38	4	8	11	30	2
	Public Universities		Public Four-Year		Public Two-Year	
First qunitile	15	87	55	50	293	60
Second quintile	58	34	199	36	384	36
Third quintile	15	37	28	23	48	21
Fourth quintile	2	15	2	20	0	-
Last quintile	1	14	0	-	7	11
	Private Universities		Private Four-Year		Private Two-Year	
First quintile	8	72	129	50	14	70
Second quintile	31	30	511	26	98	35
Third quintile	16	31	291	18	42	18
Fourth quintile	3	8	38	22	28	19
Last quintile	2	17	0	-	28	1

Table 17

Tuition Policy Review, by Control of Institution
(In Percentages)

Item	All Institutions (N=2,702)	Public Institutions (N=1,265)	Private Institutions (N=1,437)
Time of Most Recent Policy Review			
Less than one year ago	37.4	30.1	43.8
At least one but less than three years ago	32.2	33.5	30.9
At least three but less than five years ago	8.2	8.2	8.3
Five or more years ago	22.2	28.2	16.9
Total	100.0	100.0	100.0
Individual with Primary Responsibility For Tuition Refund Policy			
President	28.6	17.0	38.8
Governing board	40.5	52.6	29.8
Accrediting body	0	0	0
State or local government	7.0	14.9	0
President or governing board and others	14.0	5.9	21.0
Administrative or financial personnel	9.4	8.4	10.3
Other	.5	1.1	0
Total	100.0	100.0	100.0
Persons Participating in Policy Review			
Students	10.0	12.2	8.0
Faculty	17.9	17.9	17.8
President	69.0	62.0	75.1
Governing board	59.6	70.6	49.9
Accrediting body	2.8	3.4	2.3
State or local government	10.4	20.8	1.3
Other, administrative personnel	27.1	19.4	33.9
Other, financial personnel	21.2	12.2	29.1

Note: On this and subsequent tables, subtotals may not add exactly to their corresponding totals due to weighting and rounding.

Table 18

Tuition Policy Review, by Type and Control of Institution
(In Percentages)

Item	Public			Private		
	Universities (N=111)	Four-Year Colleges (N-368)	Two-Year Colleges (N=786)	Universities (N=71)	Four-Year Colleges (N=1,120)	Two-Year Colleges (N=246)
Time of Most Recent Policy Review						
Less than one year ago	29.5	26.6	31.9	27.7	44.1	47.1
At least one but less than five years ago	30.5	36.0	32.8	29.2	30.7	35.3
At least three but less than five years ago	7.6	9.0	7.8	15.4	9.7	0
Five or more years ago	32.4	28.4	27.5	27.7	16.1	17.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Individual with Primary Responsibility For Tuition Refund Policy						
President	13.3	15.8	18.1	46.2	39.1	35.3
Governing board	63.8	57.9	48.6	18.5	30.6	29.4
Accrediting body	0	0	0	0	0	0
State or local government	9.5	11.5	17.3	0	0	0
President or governing board and others	10.5	4.8	5.8	24.6	21.6	17.6
Administrative or financial personnel	2.9	9.8	8.5	10.8	8.7	17.6
Other	0	0	1.8	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Persons Participating in Policy Review						
Students	13.3	8.7	13.6	13.8	9.4	0
Faculty	18.1	7.3	22.8	16.9	20.5	5.9
President	59.1	59.0	63.8	76.9	76.0	70.6
Governing board	71.4	76.2	67.9	33.8	47.6	64.7
Accrediting body	1.0	.9	4.9	1.5	2.9	0
State or local government	14.3	19.3	22.5	3.1	.2	5.9
Other, administrative personnel	23.8	10.8	22.8	32.3	33.8	35.3
Other, financial personnel	17.1	21.6	7.1	33.8	30.0	23.5

Table 19

Methods of Communicating Tuition Refund Policies and Procedures, by Control of Institution (In Percentages)

Methods	All Institutions (N=2,702)	Public Institutions (N=1,265)	Private Institutions (N=1,437)
Tuition refund policy			
None available	.2	.4	0
Available upon request	31.4	35.2	28.1
Stated in catalog	96.4	96.1	96.7
Notification *prior* to registration by method other than catalog	25.8	34.0	18.6
Notification *upon* registration by method other than catalog	25.6	34.6	17.8
Tuition refund procedure			
None available	1.2	.4	2.0
Available upon request	38.5	45.2	32.7
Stated in catalog	82.8	86.3	79.8
Notification *prior* to registration by method other than catalog	19.9	26.3	14.3
Notification *upon* registration by method other than catalog	21.7	29.1	15.2
Notification at time of withdrawal	49.5	59.9	40.4

Table 20

Methods of Communicating Tuition Refund Policies and Procedures, by Type and Control of Institution (In Percentages)

Methods	Public			Private		
	Universities (N=111)	Four-Year Colleges (N=368)	Two-Year Colleges (N=786)	Universities (N=71)	Four-Year Colleges (N=1,120)	Two-Year Colleges (N=246)
Tuition refund policy						
None available	0	0	.7	0	0	0
Available upon request	46.7	43.0	30.0	30.8	27.7	29.4
Stated in catalog	91.4	92.8	98.3	96.9	95.9	100.0
Notification *prior* to registration by method other than catalog	36.2	33.4	34.0	29.2	14.2	35.3
Notification *upon* registration by method other than catalog	42.9	27.4	36.7	20.0	17.6	17.6
Tuition refund procedure						
None available	0	0	.7	1.5	2.4	0
Available upon request	51.4	51.8	41.1	43.1	32.7	29.4
Stated in catalog	81.0	77.9	90.9	83.1	79.1	82.4
Notification *prior* to registration by method other than catalog	28.6	27.5	25.4	23.1	11.7	23.5
Notification *upon* registration by method other than catalog	36.2	23.4	30.7	15.4	13.3	23.5
Notification at time of withdrawal	63.8	54.0	62.1	38.5	37.7	52.9

Table 21

Operation of Refund Policies, by Institutional Control and Type

Item	All Institutions (N=2,702)	Public				Private			
		Total (N=1,265)	Universities (N=111)	Four-Year Colleges (N=368)	Two-Year Colleges (N=786)	Total (N=1,437)	Universities (N=71)	Four-Year Colleges (N=1,120)	Two-Year Colleges (N=246)
Number first-time full-time freshmen enrolled Fall 1978*	1,624,000	1,197,500	304,500	340,400	552,600	426,500	88,100	283,700	54,800
Percentage withdrawing before end of term and eligible for tuition refund	6.5	7.6	3.3	4.9	10.8	2.7	1.9	2.6	4.0
Average *number* of weeks between applying for and receiving refund	2.5	3.2	3.3	3.4	3.0	1.8	2.4	1.9	1.4
Percentage of institutions with established procedure for appealing unfavorable refund decisions	64.0	67.7	74.0	66.7	67.2	60.7	70.8	57.9	70.6

*Estimated from National Center for Education Statistics, Higher Education General Information Survey, 1978 Opening Fall Enrollment.

APPENDIX A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

HIGHER EDUCATION PANEL
(202) 833-4757

February 2, 1979

Dear Higher Education Panel Representative:

Enclosed is the forty-sixth survey of the Higher Education Panel, "Survey of Refund Policies", sponsored by the U.S. Office of Education. The questionnaire seeks information about policies related to refunding tuition and fees of entering freshmen students who terminate their studies prior to completion of the term.

At present there is a scarcity of data about the extent and nature of institutional refund policies and their degree of flexibility. In order to assess the extent of self-regulation in this area, information on a broad level is needed.

We learned through a recent field test of this study that registrars and business officers would be best able to respond to this questionnaire. As usual, however, we leave that judgment to you.

Please understand that responses for your institution will be held in strictest confidence. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. While you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by February 19, 1979. A prepaid return envelope has been enclosed for your convenience. If you have any problems or questions, please do not hesitate to telephone us collect at 202-833-4757.

Thank you for your continuing cooperation.

Sincerely,

Frank J. Atelsek
Panel Director

OMB No. 099–R0265
Exp. 6/81

American Council on Education
Higher Education Panel Survey No. 46:
Survey of Refund Policies

DEFINITIONS

"Entering students" refers to first-time, full-time freshmen.

1. How is tuition refund policy communicated to entering freshmen students? *(Check all that apply.)*
   - _____ No student refund policy
   - _____ Policy available upon request
   - _____ Policy stated in catalog
   - _____ Student notified of policy *prior to registration* by method other than catalog
   - _____ Student notified of policy *upon registration* by method other than catalog

2. How are the students or their parents informed of the procedure to obtain a tuition refund? *(Check all that apply.)*
   - _____ No standard procedure to obtain refund
   - _____ Procedure available to student or parent upon request
   - _____ Procedure stated in catalog
   - _____ Student notified of procedure *prior to registration* by method other than catalog
   - _____ Student notified of procedure *upon registration* by method other than catalog
   - _____ Student notified of procedure at time of withdrawal

If the length of the fall term varies, use the predominant undergraduate program.

3. What is the length of your fall term for your undergraduates?

   _____ weeks

4. Complete the following chart for a first-time, full-time freshman student entering Fall 1978.

"Mandatory fees" for entering students include metriculation fees in addition to other one-term charges.

If there are different room and board charges, report the predominant or average option.

	Fall Term Charge	Percentage Refund After First Day of the Term	Percentage Refund During the Last Day of the Second Week of Classes	Percentage Refund During Last Week Refund is Available	Last Week During Which Refund Is Available
Tuition	$ _____	_____%	_____%	_____%	_____ wk.
All mandatory fees	$ _____	_____%	_____%	_____%	_____ wk.
Room	$ _____	_____%	_____%	_____%	_____ wk.
Board	$ _____	_____%	_____%	_____%	_____ wk.

If your charges are not structured in the above manner, please provide below the combinations of charges and the percentage refundable.

_____	$ _____	_____%	_____%	_____%	_____ wk.
_____	$ _____	_____%	_____%	_____%	_____ wk.

5. How many first-time, full-time freshmen were enrolled at your institution during Fall 1978? _____

   How many of the above freshmen are due (or have already received) tuition refunds because of withdrawing before the end of the Fall term? _____

   (Please provide your best estimate if actual numbers are not available.)

6. On the average, how long is the period between application for a refund and the actual refund?
   _____ weeks

7. Currently, who participates in reviewing or updating your institution's tuition refund policy?
   (Check all that apply.)

   _____ Students

   _____ Faculty

   _____ President or chief officer

   _____ Governing board

   _____ Accrediting body

   _____ State or local government

   _____ Other (specify: _____)

8. Currently, who has primary responsibility for revising or setting tuition refund policy or approving policy modifications? *(Check ONLY ONE.)*

   _____ President or chief officer

   _____ Governing board

   _____ Accrediting body

   _____ State or local government

   _____ Other (specify: _____)

9. When was your institution's tuition refund policy last up for review?

   _____ Less than one year ago

   _____ At least one but less than three years ago

   _____ At least three but less than five years ago

   _____ Five or more years ago

10. Does your institution have an established procedure whereby a student may appeal an unfavorable refund decision?

    Yes _____ No _____

(Please forward copies of any studies on the cost of withdrawals at your institution.)

Thank you for your cooperation.

Please return this form by **February 19, 1979** to:

Higher Education Panel
American Council on Education
One Dupont Circle, N.W.
Washington, D.C. 20036

Please keep a copy of this survey for your records.

Person completing form

Name _____

Dept. _____

Phone _____

If you have any questions or problems, please call the HEP staff collect at (202) 833-4757.

APPENDIX B: Response Analysis and Stratification Design

Above-average response rates were recorded for institutions enrolling 5,000 or more FTE undergraduates (98 percent), for colleges and universities located in the western states (98 percent), and public universities (96 percent).

Table B-1: Comparison of Respondents and Nonrespondents (In Percentages)

Characteristic	Respondents (N=580)	Nonrespondents (N=56)	Response Rate
Total	100.0	100.0	91.2
Control			
Public	67.2	55.4	92.6
Private	32.8	44.6	88.4
Census region			
East	27.1	36.0	89.6
Midwest	28.1	18.0	94.7
South	31.2	42.0	89.5
West	13.6	4.0	97.5
Undergraduate FTE enrollment			
1000 or less	19.3	25.0	88.9
1,001 - 4,999	37.8	66.1	85.5
5,000 - 9,999	24.5	5.4	97.9
10,000 or more	18.4	3.6	98.2
Type			
Public university	18.1	7.1	96.3
Public four-year college	26.4	23.2	92.2
Public two-year college	22.8	25.0	90.4
Private university	10.7	12.5	89.9
Private four-year college	19.3	28.6	87.5
Private two-year college	2.8	3.6	88.9

The data from each responding institution were statistically adjusted to represent the population of colleges and universities that enroll undergraduates and that charged more than $100 for in-state tuition and fees during fall 1978. The following is the stratification design used to compute the weights.

Table B-2: Stratification Design

Cell	Description	Population (N=2,702)	Respondents (N=580)
1	Public universities	111	105
2	Private universities	71	62
3	Public black four-year colleges (FTE > 3,000)	13	9
4	Public nonblack four-year colleges (FTE > 8,750)	99	76
5	Private nonblack four-year colleges (FTE > 8,750)	13	9
6	Public two-year colleges (FTE > 8,750)	18	15
7	Public four-year colleges (FTE 3,700-8,750)	75	36
8	Public four-year colleges (FTE < 3,700)	181	32
9	Private four-year colleges (FTE 2,000-8,750)	133	34
10	Private four-year colleges (FTE 1,000-2,000)	271	37
11	Private four-year colleges (FTE < 1,000)	703	32
12	Public two-year colleges (FTE 5,100-8,750)	31	17
13	Public two-year colleges (FTE 3,260-5,100)	74	28
14	Public two-year colleges (FTE 1,600-3,260)	168	31
15	Public two-year colleges (FTE < 1,600)	495	41
16	Private two-year colleges	246	16

Appendix C: Reliability of Survey Estimates

Since the statistics presented in this report are based on a sample, they will differ somewhat from the figures which would have been obtained if a complete census had been taken using the same survey instrument, instructions, and procedures. As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into the survey procedures.

The standard error is primarily a measure of sampling variability; that is, the variations that might occur by chance because only a sample of the institutions is surveyed. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; about 95 out of 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, knowing the standard error permits us to specify a range within which we can have a stated confidence that a given percentage would lie if a complete census, rather than a sample survey, had been conducted.

The following table shows 90 percent confidence intervals of the estimated mean refund policies at all, public, and private institutions.

Table C-1: Ninety Percent Confidence Intervals[a] of the Mean Refund Policies for First-Time Full-Time Freshmen, Fall 1978, by Institutional Control

Item	Number of Institutions with Charge	1978 Fall Term Charge	Percentage Refund After First Day of Term	Percentage Refund During Last Day of Second Week of Classes	Percentage Refund During Last Week Refund is Available	Percentage into Term Refund is Available[b]
ALL INSTITUTIONS						
Tuition	60	34	1.2	1.1	5.1	2.6
Mandatory Fees	78	10	12.3	9.2	5.4	3.1
Room	162	18	2.7	2.5	1.6	.8
Board	204	75	9.3	7.2	1.3	8.2
Tuition & Fees	68	292	16.6	16.5	3.2	2.2
Room & Board	47	168	7.3	.9	3.7	4.5
PUBLIC INSTITUTIONS						
Tuition	18	12	4.6	3.4	2.3	1.2
Mandatory Fees	74	6	4.6	5.0	1.9	1.5
Room	51	24	11.6	9.3	5.3	8.9
Board	36	20	6.5	5.1	2.3	3.3
Tuition and Fees	8	43	6.2	6.6	5.7	5.8
Room and Board	14	141	8.8	6.8	2.9	5.4
PRIVATE INSTITUTIONS						
Tuition	61	65	1.6	1.3	6.0	5.1
Mandatory Fees	27	18	20.5	15.2	9.0	5.7
Room	153	25	.8	1.6	.6	3.4
Board	199	111	12.3	9.2	1.9	11.0
Tuition & Fees	69	357	17.2	17.1	3.2	5.0
Room & Board	45	337	11.9	2.6	6.8	12.6

[a]Expressed as + or -.

[b]Obtained by dividing last week refund is available by length of fall term.

Other Reports of the Higher Education Panel
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El-Khawas, E. H. **College and University Facilities: Expectations of Space and Maintenance Needs for Fall 1974.** Higher Education Panel Report, No. 20, September, 1974.

Kinzer, J. L. and El-Khawas, E. H. **Compensation Practices for Graduate Research Assistants: A Survey of Selected Doctoral Institutions.** Higher Education Panel Report, No. 21, October, 1974.

El-Khawas, E. H. and Furniss, W. T. **Faculty Tenure and Contract Systems: 1972 and 1974.** Higher Education Panel Report, No. 22, December, 1974.

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Atelsek, Frank J. and Gomberg, Irene L. **Nonfederal Funding of Biomedical Research and Development: A Survey of Doctoral Institutions.** Higher Education Panel Report, No. 25, July, 1975.

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Single copies of the above reports may be obtained from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D. C. 20036.

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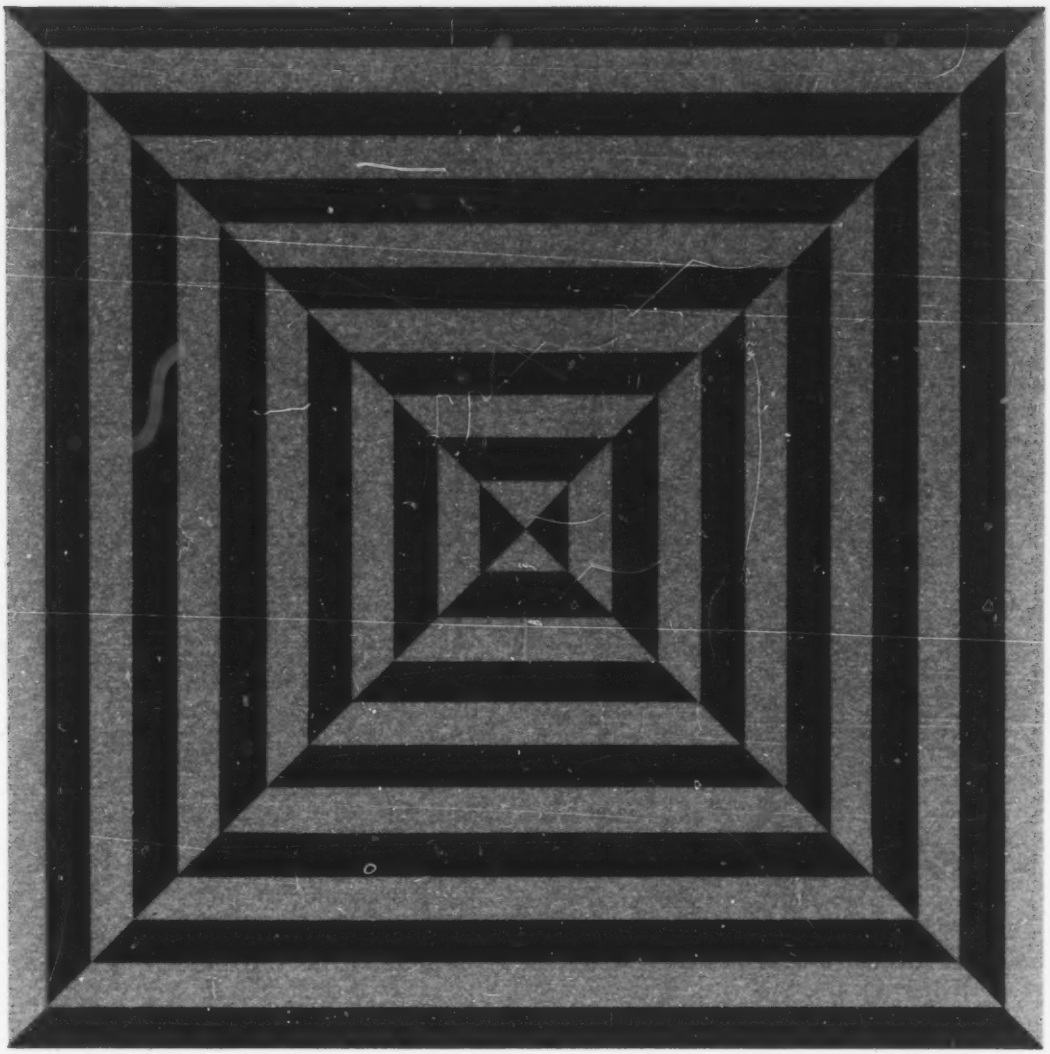
Expenditures for Scientific Research Equipment at Ph.D.-Granting Institutions, FY 1978

Irene L. Gomberg and Frank J. Atelsek



HIGHER EDUCATION PANEL REPORT, NUMBER 47
AMERICAN COUNCIL ON EDUCATION

MARCH
1980

A Survey Funded by the National Science Foundation, the U. S. Office of Education, and the National Endowment for the Humanities

AMERICAN COUNCIL ON EDUCATION

J. W. Peltason, *President*

The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under contract support provided jointly by the National Science Foundation, the National Endowment for the Humanities, and the U. S. Office of Education (NSF Contract SRS-78-16385).

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Expenditures for Scientific Research Equipment at Ph.D.-Granting Institutions, FY 1978

Irene L. Gomberg
Frank J. Atelsek

Higher Education Panel Reports

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Any opinions, findings, and conclusions or recommendations
are those of the authors and do not necessarily reflect
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The Federal Advisory Board and the HEP Advisory Committee guided the conduct of the survey, and the FAB's Technical Advisory Committee supplied valuable technical expertise.

As usual, we are indebted to our Panel representatives and survey respondents for their continued cooperation and good will.

Highlights

- During FY 1978, approximately $280 million was expended at Ph.D.-granting institutions for the purchase of scientific research equipment.
- Half of this amount was used in the life sciences, 19 percent in engineering disciplines, and 16 percent in the physical sciences.
- The federal government financed 65 percent of equipment purchases made from current funds; that proportion was 59 percent at public institutions and 75 percent at private institutions.
- For all science fields, 9 percent of research equipment expenditures from current funds were for items costing $50,000 or more. In electrical and computer engineering and in chemistry, that proportion was approximately 27 percent.
- When comparing FY 1978 equipment expenditures with the average for the previous three years, nearly half of respondents indicated that expenditures from current funds were about the same and one-third indicated they were greater.
- Expenditures for separately budgeted scientific research equipment from current funds comprised about 6 percent of all research and development expenditures at doctorate-granting institutions during FY 1978.

Background

Part of the mission of the National Science Foundation is to monitor the scientific research effort of the nation's universities and colleges, and a critical aspect of this effort is the availability and adequacy of scientific equipment.[1] In expression of a widely held belief that scientific progress has sometimes been impeded by outmoded instrumentation, a number of academic scientists and the ad hoc Committee on Instrument Funding have recently voiced the need for increasing the supply of new research equipment.

To help assess the situation, NSF asked the American Council on Education, through its Higher Education Panel, to collect information on the level of institutional expenditures for research equipment, the federal contribution to those expenditures, and the share of funds expended for high-cost items. These data will enable NSF to better analyze the impact of federal funding upon equipment expenditures and the probable effects of various policy alternatives.

Methods Summary

The Higher Education Panel is an ongoing survey research program created in 1971 by the American Council on Education to conduct specialized surveys on topics of current policy interest to the higher education community and to government agencies.

The Panel is a stratified sample of 760 colleges and universities drawn from the more than 3,000 institutions listed in the National Center for Education Statistics' Education Directory. All institutions in this population are grouped in terms of the variables constituting the Panel's stratification design, which is based primarily on type (university, four-year college, two-year college), control (public, private), and size (full-time equivalent enrollment). For any given survey either the entire Panel or an appropriate subset is used.

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[1] A recently published Higher Education Panel report (No. 44, Shared Use of Scientific Equipment at Colleges and Universities, Fall 1978, 1979) focused on the mechanisms planned or already in operation to facilitate the sharing of scientific equipment.

The population for this survey was limited to institutions which award the doctorate degree. The survey instrument (see Appendix A) was mailed on April 23, 1979, to the 236 colleges and universities in the Panel that met this criterion.

For fiscal year 1978, Panel institutions were asked to report, by field of science, the level of separately budgeted expenditures for scientific research equipment from current funds and from plant funds. Respondents were also asked to indicate the extent of federal support for equipment expenditures.

Separately budgeted research and development included all funds expended for activities specifically organized to produce research outcomes and either commissioned by an agency external to the institution or separately budgeted by an organizational unit within the institution. The survey was specifically limited in this way and therefore may exclude other substantial expenditures. For further definitions and instructions, please refer to Appendix A.

The questionnaire proved to be a very difficult one for the Panel members. Many indicated they could not distinguish research from instructional equipment, federal from nonfederal funding sources, or specific fields for which equipment was purchased. Other institutions were unable to retrieve the requested information without inordinate staff effort because of accounting procedures. As a result, extensive telephone and mail followup efforts were made. By the close of the field phase, usable data had been received from 159 institutions, or 67 percent of those surveyed. Data from responding institutions were statistically adjusted to represent the national population of 288 colleges and universities that award a Ph.D. degree.

Appendix B compares respondents with nonrespondents and describes the stratification design for weighting.

Findings

During fiscal 1978, an estimated $280 million was expended for scientific research

equipment at Ph.D.-granting institutions. See table 1.[2] Half of the expenditures were made in the life sciences, one-fifth in engineering, and one-sixth in physical sciences. Table A shows the distribution of dollars for all science fields.

On average, public institutions expended somewhat more for research equipment than private institutions. Public institutions accounted for 56 percent of the survey population but 64 percent of the expenditures for research equipment. Spending patterns by field of science were similar in both sectors. However, public institutions expended proportionately three times more in the environmental sciences and computer sciences than did private institutions, and private institutions expended proportionately more in engineering and the physical sciences than did public institutions.

Table A: Distribution of Funds Expended for Scientific Research Equipment, FY 1978

	Dollars (in 000's)	Percentage
Life sciences	137,783	49
Engineering	53,234	19
Physical sciences	44,438	16
Environmental sciences	16,805	6
Computer sciences	9,568	3
Other sciences	8,873	3
Social sciences	4,457	2
Psychology	4,194	1
Mathematics	541	*
Total	279,893	100

*Less than .05 percent.

Categories of Funding

Current funds represented $247 million, or almost 9 of every 10 dollars expended for research equipment. Plant funds provided the remaining $33 million.[3]

[2]Detailed report tables, identified by numerals, begin on page 8. Summary tables, identified by letters, appear throughout the text.

[3]As mentioned earlier, many surveyed institutions found the questionnaire difficult to complete, and many respondents were unable to provide all the data requested. Information regarding plant funds proved to be the most difficult to report and, consequently, had the lowest response rates.

Overall, at private institutions a slightly larger proportion of equipment purchases came from current funds: 92 percent, compared with 86 percent at public institutions. This difference held in all major fields except one. In the computer sciences, the proportions from current funds were nearly the same (84 percent in private and 85 percent in public institutions).

Current Funds Expenditures

The federal government provided significant support for equipment purchases from current funds. Two-thirds of these expenditures, amounting to more than $160 million, came from grants and contracts from various federal agencies. See table 2.

Federal support accounted for a considerably larger share of equipment purchases at private institutions than at public institutions: 75 percent compared with 59 percent. See table B below. This difference held for all of the major field groupings except the physical sciences, to which federal sources contributed 70 percent of the current funds used for equipment purchases in each sector. See tables 3 and 4.

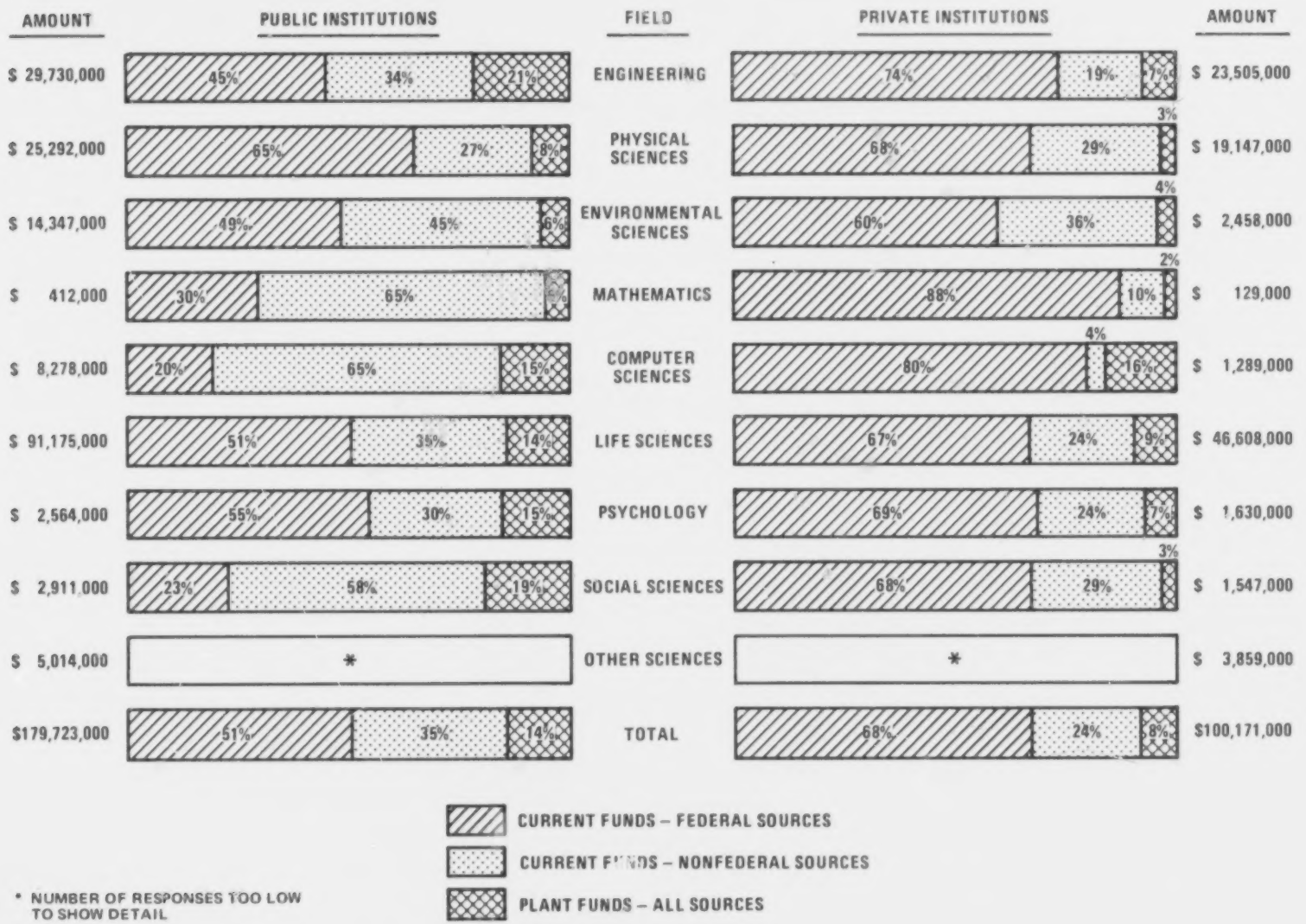
Table B: Proportion of Separately Budgeted Scientific Equipment Expenditures (Current Funds) Supported by the Federal Government, FY 1978

Category of Institution	Total Expenditures (Current Funds)	Percentage from the Federal Government
All	$247,228,000	65
Public	155,292,000	59
Private	91,936,000	75

In both sectors, the fields of chemical and civil engineering, geological sciences, and the social sciences each received lower-than-average proportions of federal support for equipment expenditures. Higher-than-average federal support was given in both sectors in the fields of mechanical engineering, atmospheric sciences, physics, and other physical sciences.

Figure 1 shows the distribution of the sources of research equipment expenditures, including both current and plant funds.

FIG. 1 SOURCES OF EXPENDITURES FOR SCIENTIFIC RESEARCH EQUIPMENT, FY 1978



* NUMBER OF RESPONSES TOO LOW TO SHOW DETAIL

High-Cost Equipment

During the survey year, 9 percent of scientific equipment expenditures from current funds were made for items costing $50,000 or more. The fields of electrical and computer engineering and chemistry each directed more than one-fourth of their equipment dollars toward high-cost items.

Private institutions spent a somewhat larger proportion of their equipment funds for expensive items: 11 percent vs. 8 percent at public institutions.

Change in Level of Expenditures

Respondents were asked to compare their FY 78 equipment expenditures with the average for the preceding three years. As can be seen in table C below, their responses were mixed according to the category of funds.

Table C: FY 1978 Expenditures for Scientific Research Equipment Compared with the Average Expenditures for the Previous Three Years (unweighted data)

FY 78 Expenditures Compared with Average	Current Funds*			Plant Funds*		
	Total	Public	Private	Total	Public	Private
Greater	36	33	41	31	31	30
About the same (±5%)	46	46	45	43	41	50
Less	18	21	14	26	28	20
Total percent	100 (N=141)	100 (N=92)	100 (N=49)	100 (N=42)	100 (N=32)	100 (N=10)

*This distribution includes only those institutions that reported expenditures from this category of funds.

With both current and plant funds, the largest proportion of institutions--more than two-fifths--indicated that spending levels had remained stable, and about one-third felt there had been a greater level of expenditures in FY 78. Institutions more frequently noted lower levels of FY 78 expenditures from plant funds than from current funds (26 percent vs. 18 percent). By sector, proportionately more public than private institutions reported that their FY 78 expenditures were less from both current and from plant funds.

Share of Total R&D Expenditures

During FY 78, expenditures for separately budgeted scientific research equipment from current funds comprised about 6 percent of all research and development expenditures at doctorate-granting institutions. See table D. That proportion ranged from 9 percent in the physical sciences to 2 percent in the social sciences. Whereas the overall proportions were almost the same, public institutions spent a much larger share of R&D funds for research equipment than did private institutions in mathematical and computer sciences. The reverse was true in engineering: private institutions spent a larger proportion on research equipment in this field than did public institutions.

Table D: FY 78 Expenditures for Separately Budgeted Scientific Research Equipment from Current Funds as a Percentage of Total Research and Development Expenditures*

	Ph.D.-Granting Institutions		
	Total	Public	Private
Engineering	8	6	10
Physical sciences	9	8	9
Environmental sciences	4	5	3
Mathematical and computer sciences	7	10	3
Life sciences	5	5	5
Psychology	4	4	5
Social sciences	2	1	2
Other sciences	7	5	13
Total	6	5	6

*See tables 5, 6, and 7 for more detail.

Basic Report Tables

Table 1

Distribution of Expenditures for Scientific Research Equipment, by Category of Funds, FY 1978

Field	Total		Current Funds	Plant Funds
	Dollars	Percent		
All Ph.D.-Granting Institutions				
Engineering	53,234,000	100	85	15
Physical sciences	44,438,000	100	94	6
Environmental sciences	16,805,000	100	94	6
Mathematics	541,000	100	96	4
Computer sciences	9,568,000	100	85	15
Life sciences	137,783,000	100	88	12
Psychology	4,194,000	100	88	12
Social sciences	4,457,000	100	87	13
Other sciences	8,873,000	100	*	*
Total	279,893,000	100	88	12
Public Ph.D.-Granting Institutions				
Engineering	29,730,000	100	79	21
Physical sciences	25,292,000	100	92	8
Environmental sciences	14,347,000	100	94	6
Mathematics	412,000	100	95	5
Computer sciences	8,278,000	100	85	15
Life sciences	91,175,000	100	86	14
Psychology	2,564,000	100	85	15
Social sciences	2,911,000	100	81	19
Other sciences	5,014,000	100	*	*
Total	179,723,000	100	86	14
Private Ph.D.-Granting Institutions				
Engineering	23,505,000	100	93	7
Physical sciences	19,147,000	100	97	3
Environmental sciences	2,458,000	100	96	4
Mathematics	129,000	100	98	2
Computer sciences	1,289,000	100	84	16
Life sciences	46,608,000	100	91	9
Psychology	1,630,000	100	93	7
Social sciences	1,547,000	100	97	3
Other sciences	3,859,000	100	*	*
Total	100,171,000	100	92	8

Note: On this and subsequent tables, subtotals may not add exactly to their corresponding totals because of weighting and rounding.

*The number of responding institutions is too small to show detail.

Table 2

Distribution of Expenditures for Scientific Research Equipment from Separately Budgeted Research and Development Funds (Current Funds Only), by Source and Field, FY 1978: All Ph.D.-Granting Institutions

Field	Source: Total Dollars	Source: Total Percent	Source: Federal Government	Source: All Other	Equipment Costing $50,000 or More[a]
Engineering					
Chemical	3,852,000	100	56	44	0
Civil	2,575,000	100	40	60	0
Electrical & computer	13,080,000	100	73	27	28
Mechanical	4,480,000	100	87	13	6
Other	21,255,000	100	69	31	6
Subtotal	45,243,000	100	68	32	12
Physical sciences					
Astronomy	4,027,000	100	75	25	0
Chemistry	21,484,000	100	62	38	27
Physics	14,310,000	100	81	19	5
Other	2,011,000	100	76	24	0
Subtotal	41,832,000	100	70	30	15
Environmental sciences					
Atmospheric	3,525,000	100	78	22	15
Geological	8,046,000	100	33	67	4
Oceanographic	4,216,000	100	67	33	0
Subtotal	15,788,000	100	54	46	5
Mathematics	518,000	100	46	54	0
Computer sciences	8,099,000	100	33	67	11
Life sciences					
Biological	41,696,000	100	72	28	4
Agricultural	17,337,000	100	33	67	1
Medical	56,408,000	100	69	31	9
Other	5,272,000	100	64	36	16
Subtotal	120,713,000	100	65	35	6
Psychology	3,690,000	100	69	31	0
Social sciences	3,860,000	100	44	56	16
Other sciences	7,485,000	100	b	b	7
Total	$247,228,000	100	65	35	9

[a]Caution should be exercised in interpreting these data. In many of the fields only one or two institutions purchased high-cost equipment, which may create an instability in the percentages shown.

[b]The number of responding institutions is too small to show detail.

Table 3

Distribution of Expenditures for Scientific Research Equipment from Separately Budgeted Research and Development Funds (Current Funds Only), by Source and Field, FY 1978: Public Ph.D.-Granting Institutions

Field	Source: Total Dollars	Source: Total Percent	Source: Federal Government	Source: All Other	Equipment Costing $50,000 or More[a]
Engineering					
Chemical	2,091,000	100	57	43	0
Civil	2,162,000	100	35	65	0
Electrical & computer	5,686,000	100	57	43	19
Mechanical	1,762,000	100	99	1	0
Other	11,795,000	100	56	44	9
Subtotal	23,497,000	100	57	43	9
Physical sciences					
Astronomy	2,496,000	100	92	8	0
Chemistry	11,733,000	100	63	37	28
Physics	7,324,000	100	74	26	7
Other	1,773,000	100	74	26	0
Subtotal	23,326,000	100	70	30	16
Environmental sciences					
Atmospheric	3,329,000	100	77	23	16
Geological	6,820,000	100	30	70	5
Oceanographic	3,276,000	100	67	33	0
Subtotal	13,425,000	100	52	48	6
Mathematics	392,000	100	32	68	0
Computer sciences	7,012,000	100	24	76	12
Life sciences					
Biological	25,375,000	100	70	30	3
Agricultural	17,309,000	100	33	67	1
Medical	32,738,000	100	65	35	8
Other	2,898,000	100	62	38	3
Subtotal	78,319,000	100	60	40	5
Psychology	2,176,000	100	65	35	0
Social sciences	2,352,000	100	28	72	0
Other sciences	4,792,000	100	b	b	10
Total	155,292,000	100	59	41	8

[a]Caution should be exercised in interpreting these data. In many of the fields only one or two institutions purchased high-cost equipment, which may create an instability in the percentages shown.

[b]The number of responding institutions is too small to show detail.

Table 4

Distribution of Expenditures for Scientific Research Equipment from Separately Budgeted Research and Development Funds (Current Funds Only), by Source and Field, FY 1978: Private Ph.D.-Granting Institutions

Field	Source				Equipment Costing $50,000 or More[a]
	Total		Federal Government	All Other	
	Dollars	Percent			
Engineering					
Chemical	1,761,000	100	54	46	0
Civil	413,000	100	62	38	0
Electrical & computer	7,394,000	100	83	17	33
Mechanical	2,718,000	100	80	20	10
Other	9,460,000	100	82	18	3
Subtotal	21,746,000	100	80	20	15
Physical sciences					
Astronomy	1,531,000	100	47	53	0
Chemistry	9,751,000	100	60	40	26
Physics	6,986,000	100	89	11	3
Other	238,000	100	91	9	0
Subtotal	18,506,000	100	70	30	15
Environmental sciences					
Atmospheric	196,000	100	98	2	0
Geological	1,226,000	100	50	50	0
Oceanographic	940,000	100	69	31	0
Subtotal	2,363,000	100	62	38	0
Mathematics	127,000	100	90	10	0
Computer sciences	1,086,000	100	95	5	0
Life sciences					
Biological	16,321,000	100	74	26	5
Agricultural	28,000	100	88	12	0
Medical	23,670,000	100	74	26	9
Other	2,374,000	100	67	33	32
Subtotal	42,394,000	100	74	26	8
Psychology	1,514,000	100	74	26	0
Social sciences	1,507,000	100	70	30	41
Other sciences	2,693,000	100	b	b	0
Total	91,936,000	100	75	25	11

[a]Caution should be exercised in interpreting these data. In many of the fields only one or two institutions purchased high-cost equipment, which may create an instability in the percentages shown.

[b]The number of responding institutions is too small to show detail.

Table 5

FY 1978 Expenditures for Scientific Research Equipment from Separately-Budgeted Research and Development Funds (Current Funds Only) As a Proportion of Total and Federally Financed Research and Development Expenditures, by Field and Source: All Doctorate-Granting Institutions

Field	All Sources All Purposes[a] Dollars (in 000s)	Percent	Scientific Research Equipment Purchased from Separately-Budgeted R&D Funds: All Equipment Dollars (in 000s)	Percent	Equipment > $50,000 Dollars (in 000s)	Percent	Federal Sources All Purposes[a] Dollars (in 000s)	Percent	Scientific Research Equipment Purchased from Separately-Budgeted Federal R&D Funds Dollars (in 000s)	Percent
Engineering	592,013	100.0	45,243	7.6	5,298	.9	402,206	100.0	30,775	7.7
Physical sciences	481,906	100.0	41,832	8.7	6,467	1.3	384,072	100.0	29,444	7.7
Environmental sciences	366,333	100.0	15,788	4.3	841	.2	267,219	100.0	8,461	3.2
Mathematical and computer sciences	119,706	100.0	8,617	7.2	860	.7	83,261	100.0	2,927	3.5
Life sciences	2,512,917	100.0	120,713	4.8	7,519	.3	1,606,269	100.0	77,950	4.9
Psychology	86,192	100.0	3,690	4.3	0	0	61,935	100.0	2,534	4.1
Social sciences	261,782	100.0	3,860	1.5	611	.2	135,309	100.0	1,706	1.3
Other sciences	109,263	100.0	7,485	6.9	493	.5	62,806	100.0	7,044	11.2
Total	4,530,112	100.0	247,228	5.5	22,089	.5	3,003,077	100.0	160,840	5.4

[a]From NSF Survey of Scientific and Engineering Expenditures at Universities and Colleges, FY 1978 (prepublication tables).

Table 6

FY 1978 Expenditures for Scientific Research Equipment from Separately-Budgeted Research and Development Funds (Current Funds Only) As a Proportion of Total and Federally Financed Research and Development Expenditures, by Field and Source: Public Doctorate-Granting Institutions

Field	All Sources All Purposes[a]		Scientific Research Equipment Purchased from Separately-Budgeted R&D Funds				Federal Sources All Purposes[a]		Scientific Research Equipment Purchased from Separately-Budgeted Federal R&D Funds	
			All Equipment		Equipment > $50,000					
	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent
Engineering	367,379	100.0	23,497	6.4	2,070	.6	230,210	100.0	13,409	5.8
Physical sciences	274,074	100.0	23,326	8.5	3,767	1.4	208,278	100.0	16,444	7.9
Environmental sciences	277,451	100.0	13,425	4.8	841	.3	192,613	100.0	6,991	3.6
Mathematical and computer sciences	72,288	100.0	7,404	10.2	860	1.2	42,588	100.0	1,776	4.2
Life sciences	1,618,613	100.0	78,319	4.8	3,925	.2	930,186	100.0	46,630	5.0
Psychology	55,158	100.0	2,176	3.9	0	0	38,659	100.0	1,410	3.6
Social sciences	177,937	100.0	2,352	1.3	0	0	87,385	100.0	653	.7
Other sciences	89,123	100.0	4,792	5.4	493	.6	49,318	100.0	5,035	10.2
Total	2,932,023	100.0	155,292	5.3	11,957	.4	1,779,237	100.0	92,346	5.2

[a]From NSF Survey of Scientific and Engineering Expenditures at Universities and Colleges, FY 1978 (prepublication tables).

Table 7

FY 1978 Expenditures for Scientific Research Equipment from Separately-Budgeted Research and Development Funds (Current Funds Only) As a Proportion of Total and Federally Financed Research and Development Expenditures, by Field and Source:
Private Doctorate-Granting Institutions

Field	All Sources All Purposes[a]		Scientific Research Equipment Purchased from Separately-Budgeted R&D Funds				Federal Sources All Purposes[a]		Scientific Research Equipment Purchased from Separately-Budgeted Federal R&D Funds	
			All Equipment		Equipment > $50,000					
	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent	Dollars (in 000s)	Percent
Engineering	224,634	100.0	21,746	9.7	3,228	1.4	171,996	100.0	17,366	10.1
Physical sciences	207,832	100.0	18,506	8.9	2,700	1.3	175,794	100.0	13,000	7.4
Environmental sciences	88,882	100.0	2,363	2.7	0	0	74,606	100.0	1,470	2.0
Mathematical and computer sciences	47,418	100.0	1,213	2.6	0	0	40,673	100.0	1,151	2.8
Life sciences	894,304	100.0	42,394	4.7	3,594	.4	676,083	100.0	31,320	4.6
Psychology	31,034	100.0	1,514	4.9	0	0	23,276	100.0	1,124	4.8
Social sciences	83,845	100.0	1,507	1.8	611	.7	47,924	100.0	1,053	2.2
Other sciences	20,140	100.0	2,693	13.4	0	0	13,488	100.0	2,009	14.9
Total	1,598,089	100.0	91,936	5.8	10,132	.6	1,223,840	100.0	68,494	5.6

[a]From NSF Survey of Scientific and Engineering Expenditures at Universities and Colleges, FY 1978 (prepublication tables).

APPENDIX A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

HIGHER EDUCATION PANEL
(202) 833-4757

April 23, 1979

Dear Higher Education Panel Representative:

Attached is the forty-seventh survey of the Higher Education Panel, "Expenditures for Scientific Research Equipment, Fiscal Year 1978." It is sponsored by the National Science Foundation, which seeks information on expenditures from *separately budgeted* research and development funds for the purchase of equipment used primarily for scientific research.

The survey addresses the overall policy issue of the adequacy of scientific research equipment. As such it is closely allied with an earlier NSF-sponsored study on the shared use of scientific equipment (HEP survey #44). The present survey is designed to obtain data on the level of university expenditures for research equipment, the federal contribution to these expenditures, and the proportion of funds expended for high-cost equipment. With this information NSF and other federal science agencies will be better able to determine the probable effects of federal policy alternatives.

Based on the field test results, we believe that the requested information can be provided from central institutional sources. Please provide your best estimates where actual data are either not available or not easily accessible. The field test also indicated that directors of institutional research and vice-presidents for research would be best able to respond. As usual, however, we leave that judgment to you.

Please understand that responses from your institutions will be held in strictest confidence. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. While you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by May 14, 1979. A prepaid return envelope has been enclosed for your convenience. If you have any problems or questions, please do not hesitate to telephone us collect at 202-833-4757.

Thank you for your continuing support.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

Instructions

This survey requests fiscal year 1978 expenditures from separately budgeted research and development funds for purchase of scientific equipment to be used primarily for research. *Exclude equipment used primarily for instruction.*

If actual expenditure data are not easily available, please provide your best estimates.

Equipment is defined to include articles of nonexpendable tangible personal property having a useful life of more than one year and an acquisition cost of *$300 or more* per unit. Institutions may use their own definition provided that it at least includes all equipment defined here.

The equipment may be of the following types provided it is purchased from separately budgeted research and development funds:

(a) movable scientific equipment, such as oscilloscopes, pulse-height analyzers

(b) fixed scientific equipment, such as electron microscopes

Separately budgeted research and development includes all funds expended for activities specifically organized to produce research outcomes and either commissioned by an agency external to the institution or separately budgeted by an organizational unit within the institution. (We realize that limiting the survey to expenditures from separately budgeted research and development funds may exclude other substantial expenditures. But *please* follow this limitation.)

In question #1:

For column (1) report current funds expenditures from all sources: federal government; state, county, municipal, or other governments and their agencies (including state funds supporting research and development at agricultural experiment stations); industry, private foundations and voluntary health agencies, individuals and associations; and institutional funds.

For column (2), federal government sources include funds from grants and contracts for research and development by all agencies of the federal government.

For column (3), include only funds which were expended for items of scientific research equipment which cost $50,000 or more. These expenditures may have come from any one or more sources and should also be included in column (1).

In question #2, expenditures from *plant funds only* should be reported. If you have expenditures for scientific research equipment from plant funds but are unable to determine the amount, please provide an estimate of the total.

American Council on Education
Higher Education Panel Survey No. 47

OMB No. 099-R0265
Exp. 6/81

Expenditures for Scientific Research Equipment

1. Please report below FY 1978 expenditures for scientific research equipment* purchased with *separately budgeted* research and development funds. Include expenditures from *current funds only*.

Discipline	Source of Funds: Total (1)	Source of Funds: Federal Government (2)	Of the total in (1), how much was for equipment costing $50,000 or more per unit (3)
Engineering			
Chemical	$	$	$
Civil			
Electrical and computer			
Mechanical			
Other (including multidisciplinary)			
Physical sciences			
Astronomy			
Chemistry			
Physics			
Other (including multidisciplinary)			
Environmental sciences			
Atmospheric			
Geological			
Oceanographic			
Mathematics			
Computer sciences			
Life sciences			
Biological			
Agricultural			
Medical			
Other (including multidisciplinary)			
Psychology			
Social sciences			
Other sciences not elsewhere classified			
TOTAL	$	$	$

Equipment is defined to include articles of nonexpendable tangible personal property having a useful life of more than one year and an acquisition cost of $300 or more per unit. Institutions may use their own definition provided that it at least includes all equipment defined here.

OVER

2. Please report FY 1978 expenditures for scientific research equipment purchased from *plant funds* from all sources:

Discipline	Amount
Engineering	
Physical sciences	
Environmental sciences	
Mathematics	
Computer sciences	
Life sciences	
Psychology	
Social sciences	
Other sciences	
Total	

3. How do the FY 1978 expenditures compare with the average for the previous three years? (Please check one in each column.)

FY 1978 Expenditures	Current Funds (Q.1)	Plant Funds (Q.2)
Substantially greater	( )	( )
Moderately greater (5% to 25% more)	( )	( )
About the same (within ±5%)	( )	( )
Moderately less (5% to 25% less)	( )	( )
Substantially less	( )	( )

4. IF YOUR INSTITUTION'S DEFINITION OF EQUIPMENT DIFFERS FROM THAT USED IN THIS SURVEY, what is the lowest dollar amount used for classification as equipment?

$_____

5. On what basis were the above expenditure data reported? (Please check one in each column.)

	Current Funds (Q.1)	Plant Funds (Q.2)
Actual records	( )	( )
Good estimates based substantially on actual records	( )	( )
Mostly estimates	( )	( )

6. If NSF were to periodically request these expenditure data, could your institution report good usable data?

	Current Funds (Q.1)	Plant Funds (Q.2)
Yes	( )	( )
No	( )	( )

If "no", what are the problems?

_____

_____

_____

_____

_____

Thank you for your assistance.

Please return this form by May 14, 1979 to:

Higher Education Panel
American Council on Education
One Dupont Circle, N.W.
Washington, D.C. 20036

Please keep a copy of this survey for your records.

Person completing form

Name_____

Dept._____

Phone_____

If you have any questions or problems, please call the HEP staff collect at (202)833-4757.

Illustrative Disciplines

Expenditures should be reported by discipline according to the following illustrative list. Based on field test findings, we expect that most respondents will report on the basis of departmental structures. Please use your best judgment in reporting data for science departments that cross over the discipline categories used in this survey.

Engineering
- Chemical
- Civil
- Electrical and computer
- Mechanical
- Other: aeronautical, agricultural, architectural, industrial, metallurgical, mining, nuclear, bio- and biomedical, textile, petroleum, energy

Physical sciences
- Astronomy: astrophysics, optical and radio, x-ray, gamma-ray, neutrino
- Chemistry: inorganic, organo-metallic, organic, physical, analytical, pharmaceutical, polymer science (excluding biochemistry)
- Physics: acoustics, atomic and molecular, condensed matter, elementary particles, nuclear structure, optics, plasma
- Other: Used for multidisciplinary projects within physical science and for disciplines not requested separately.

Environmental sciences
- Atmospheric: aeronomy, solar weather modification, meteorology, extraterrestrial atmospheres
- Geological: engineering geophysics, geology, geodesy, geomagnetism, hydrology, geochemistry, paleomagnetism, paleontology, physical geography, cartography, seismology, soil sciences
- Oceanographic: chemical, geological, physical, marine geophysics, marine biology, biological oceanography

Mathematics: algebra, analysis, applied mathematics, foundations and logic, geometry, numerical analysis, statistics, topology

Computer sciences: design, development, and application of computer capabilities to data storage and manipulation, information science

Life sciences
- Biological: anatomy, biochemistry, biophysics, biogeography, ecology, embryology, entomology, genetics, immunology, microbiology, nutrition, parasitology, pathology, pharmacology, physical anthropology, physiology, botany, zoology
- Agricultural: agricultural chemistry, agronomy, animal science, conservation, dairy science, plant science, range science, wildlife
- Medical: anesthesiology, cardiology, endocrinology, gastroenterology, hematology, neurology, obstetrics, opthalmology, preventive medicine and community health, psychiatry, radiology, surgery, veterinary medicine, dentistry, pharmacy
- Other: Used for multidisciplinary projects within life sciences.

Psychology: animal behavior, clinical, educational, experimental, human development and personality, social

Social sciences
- Economics: econometrics, international, industrial, labor, agricultural, public finance and fiscal policy
- Political science: regional studies, comparative government, international relations, legal systems, political theory, public administration.
- Sociology: comparative and historical, complex organizations, culture and social structure, demography, group interactions, social problems and welfare, theory
- Other: history of science, anthropology, linguistics, socio-economic geography

Other sciences not elsewhere classified: To be used when the multidisciplinary and interdisciplinary aspects make the classification under one primary field impossible.

APPENDIX B: Response Analysis and Stratification Design

Of the 236 Ph.D.-granting Panel members included in the survey, 159 institutions (67 percent) provided usable responses. As shown in table B-1, respondents generally resembled nonrespondents. Private four-year colleges were least likely to respond (only 56 percent did so), whereas public four-year colleges were most likely to respond (a 76 percent response rate).

Table B-1: Comparison of Respondents and Nonrespondents (In Percentages)

Characteristic	Respondents (N=159)	Nonrespondents (N=77)	Response Rate
Total	100.0	100.0	67.4
Control			
Public	64.2	59.7	68.9
Private	35.8	40.3	64.8
Type			
Public universities	45.9	48.1	66.4
Private universities	29.6	29.9	67.1
Public four-year colleges	18.2	11.7	76.3*
Private four-year colleges	6.3	10.4	55.6*
Total enrollment (1976)			
Less than 1,000	4.4	3.9	70.0
1,001-4,999	15.7	18.2	64.1
5,000-9,999	22.6	29.9	61.0
10,000 or more	57.2	48.1	71.1
Graduate enrollment (1976 FTE)			
200 or less	10.7	10.4	68.0
201-1,000	32.1	27.3	70.8
1,001-3,000	39.6	45.5	64.3
More than 3,000	17.6	16.9	68.3
Census region			
East	28.5	26.0	69.2
Midwest	20.9	26.0	62.3
South	32.9	29.9	69.3
West	17.7	18.2	66.7

*Exceeds or falls short of the overall response rate by more than 10 percent.

Source of Reported Data

Respondents were asked to indicate on what basis they had reported the current fund and plant fund expenditure data. On the whole, most responses came from actual records or good estimates based on actual records. As shown in table B-2 below, only 5 percent reported "mostly estimates" of current funds, and 12 percent reported "mostly estimates" of plant funds.

Table B-2: Source of Reported FY 78 Expenditures for Scientific Research Equipment (in percentages)

Source of Data	Current Funds			Plant Funds		
	Total	Public	Private	Total	Public	Private
Actual records	63.4	62.0	66.0	51.5	50.7	53.8
Good estimates based on actual records	31.4	32.0	30.2	36.1	35.2	38.5
Mostly estimates	5.2	6.0	3.8	12.4	14.1	7.7
Total	100.0 (N=153)	100.0 (N=100)	100.0 (N=53)	100.0 (N=97)	100.0 (N=71)	100.0 (N=26)

Weighting

The survey population was limited to the 288 colleges and universities that award the Ph.D. degree. Of these, 236 institutions are Panel members and were surveyed. All institutions in the population were grouped according to the variables constituting the stratification design as shown in table B-3.

Table B-3: Stratification Design for Weighting

Cell	Population (N=288)	Respondents (N=159)
1 Public Ph.D. universities	112	74
2 Private Ph.D. universities	73	46
3 Public medical school	17	11
4 Public nonblack four-year colleges (FTE > 8,750)	19	14
5 Private medical schools	8	4
6 Private nonblack four-year colleges (FTE > 8,750)	6	2
7 Public four-year colleges (FTE 3,700-8,750)	8	3
8 Public four-year colleges (FTE < 3,700)	6	1
9 Private four-year colleges (FTE 2,000-8,750)	10	2
10 Private four-year colleges (FTE 1,000-2,000)	9	1
11 Private four-year colleges (FTE < 1,000)	20	1

Statistical adjustment of the survey responses to develop national estimates was accomplished on an institutional basis. That is, each data item was weighted, within each stratification cell, by the ratio of the number of institutions in the population to the number of institutions in the Panel that responded to the survey item. Weights were computed separately to allow for a different number of responses to each part of the questionnaire. The resulting cell and item weights were applied to the responses of each institution, and the weighted data were then aggregated into the broad institutional categories used in the survey analysis. Thus all data represent independently computed population estimates, and subtotals may not add exactly to their corresponding totals.

Sampling Error

Because of the nature of both the Panel and the survey sample, no estimates of sampling error were computed. The population of institutions is stratified into 18 cells. The first eight, termed "certainty" cells, are self representing: All were invited to participate in the Panel during its revision in 1976. For each of the remaining ten cells, probability samples of institutions were drawn.

For this particular survey, the population was limited to 288 Ph.D.-granting institutions, 82 percent of which are Panel members. Further, 96 percent of the Ph.D.-granting institutions within the Panel are in the certainty cells; only ten institutions are in probability cells. Therefore, the computation of sampling error for ten institutions was not considered necessary.

Other Reports of the Higher Education Panel
American Council on Education

El-Khawas, E. H. and Kinzer, J. L. **The Impact of Office of Education Student Assistance Programs, Fall 1973.** Higher Education Panel Report, No. 18, April, 1974.

El-Khawas, E. H. and Kinzer, J. L. **Enrollment of Minority Graduate Students at Ph.D. Granting Institutions.** Higher Education Panel Report, No. 19, August, 1974.

El-Khawas, E. H. **College and University Facilities: Expectations of Space and Maintenance Needs for Fall 1974.** Higher Education Panel Report, No. 20, September, 1974.

Kinzer, J. L. and El-Khawas, E. H. **Compensation Practices for Graduate Research Assistants: A Survey of Selected Doctoral Institutions.** Higher Education Panel Report, No. 21, October, 1974.

El-Khawas, E. H. and Furniss, W. T. **Faculty Tenure and Contract Systems: 1972 and 1974.** Higher Education Panel Report, No. 22, December, 1974.

El-Khawas, E. H. and Kinzer, J. L. **A Survey of Continuing Education Opportunities Available to Nonacademic Scientists, Engineers and Mathematicians,** Higher Education Panel Report, No. 23, April, 1975.

Atelsek, Frank J. and Gomberg, Irene L. **Bachelor's Degrees Awarded to Minority Students, 1973-74.** Higher Education Panel Report, No. 24, January, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Nonfederal Funding of Biomedical Research and Development: A Survey of Doctoral Institutions.** Higher Education Panel Report, No. 25, July, 1975.

Gomberg, Irene L. and Atelsek, Frank J. **Major Field Enrollment of Junior-Year Students, 1973 and 1974.** Higher Education Panel Report, No. 26, April, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **Student Assistance: Participants and Programs, 1974-75.** Higher Education Panel Report, No. 27, July, 1975.

Atelsek, Frank J. and Gomberg, Irene L. **Health Research Facilities: A Survey of Doctorate-Granting Institutions.** Higher Education Panel Report, No. 28, February, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **Faculty Research: Level of Activity and Choice of Area.** Higher Education Panel Report, No. 29, January, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **Young Doctorate Faculty in Selected Science and Engineering Departments, 1975 to 1980.** Higher Education Panel Report, No. 30, August, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **Energy Costs and Energy Conservation Programs in Colleges and Universities: 1972-73 and 1974-75.** Higher Education Panel Report, No. 31, April, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Foreign Area Research Support Within Organized Research Centers at Selected Universities, FY 1972 and 1976.** Higher Education Panel Report, No. 32, December, 1976.

Atelsek, Frank J. and Gomberg, Irene L. **College and University Services for Older Adults.** Higher Education Panel Report, No. 33, February, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Production of Doctorates in the Biosciences, 1975-1980: An Experimental Forecast.** Higher Education Panel Report, No. 34, November 1977.

Gomberg, Irene L. and Atelsek, Frank J. **Composition of College and University Governing Boards.** Higher Education Panel Report, No. 35, August, 1977.

Atelsek, Frank J. and Gomberg, Irene L. **Estimated Number of Student Aid Recipients, 1976-77.** Higher Education Panel Report, No. 36, September, 1977.

Gomberg, Irene L. and Atelsek, Frank J. **International Scientific Activities at Selected Institutions, 1975-76 and 1976-77,** Higher Education Panel Report, No. 37, January, 1978.

Atelsek, Frank J. and Gomberg, Irene L. **New Full-Time Faculty 1976-77: Hiring Patterns by Field and Educational Attainment,** Higher Education Panel Report, No. 38, March 1978.

Gomberg, Irene L. and Atelsek, Frank J. **Nontenure-Track Science Personnel: Opportunities for Independent Research,** Higher Education Panel Report, No. 39, September 1978.

Atelsek, Frank J. and Gomberg, Irene L. **Scientific and Technical Cooperation with Developing Countries, 1977-78,** Higher Education Panel Report, No. 40, August 1978.

Atelsek, Frank J. and Gomberg, Irene L. **Special Programs for Female and Minority Graduate Students,** Higher Education Panel Report, No. 41, November 1978.

Gomberg, Irene L. and Atelsek, Frank J. **The Institutional Share of Undergraduate Financial Assistance, 1976-77,** Higher Education Panel Report, No. 42, May 1979.

Atelsek, Frank J. and Gomberg, Irene L. **Young Doctoral Faculty in Science and Engineering: Trends in Composition and Research Activity,** Higher Education Panel Report, No. 43, February 1979.

Atelsek, Frank J. and Gomberg, Irene L. **Shared Use of Scientific Equipment at Colleges and Universities, Fall 1978,** Higher Education Panel Report, No. 44, November 1979.

Gomberg, Irene L. and Atelsek, Frank J. **Newly Qualified Elementary and Secondary School Teachers, 1977-78 and 1978-79,** Higher Education Panel Report, No. 45, February 1980.

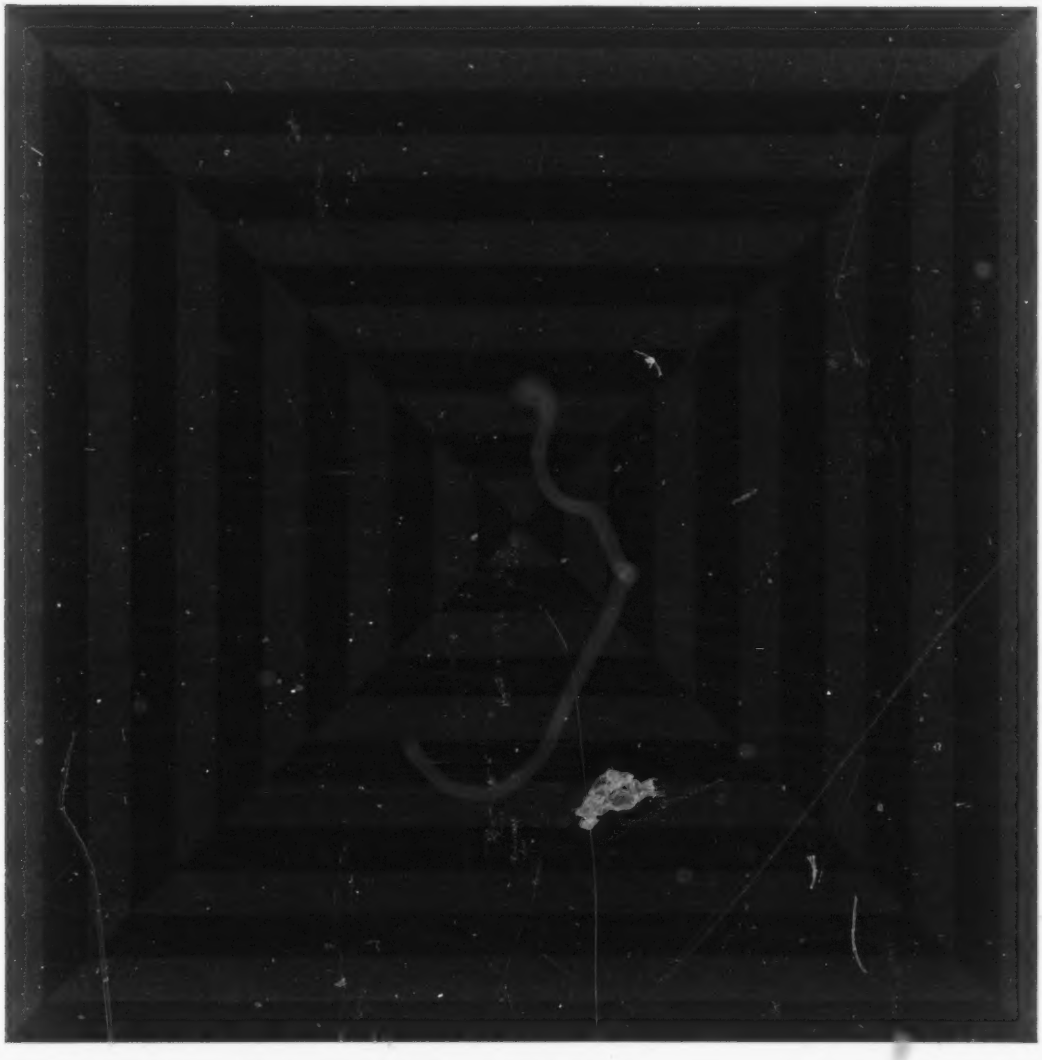
Atelsek, Frank J. and Gomberg, Irene L. **Refund Policies and Practices of Colleges and Universities.** Higher Education Panel Report, No. 46, February 1980.

Single copies of the above reports may be obtained from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D. C. 20036.

A1410-1.4 A

Tenure Practices at Four-Year Colleges and Universities

Frank J. Atelsek and Irene L. Gomberg



HIGHER EDUCATION PANEL REPORT, NUMBER 48
AMERICAN COUNCIL ON EDUCATION

JULY
1980

A Survey Funded by the National Science Foundation, the Department of Education, and the National Endowment for the Humanities

AMERICAN COUNCIL ON EDUCATION

J. W. Peltason, *President*

The American Council on Education, founded in 1918, is a council of educational organizations and institutions. Its purpose is to advance education and educational methods through comprehensive voluntary and cooperative action on the part of American educational associations, organizations, and institutions.

The Higher Education Panel is a survey research program established by the Council for the purpose of securing policy-related information quickly from representative samples of colleges and universities. *Higher Education Panel Reports* are designed to expedite communication of the Panel's survey findings to policy-makers in government, in the associations, and in educational institutions across the nation.

The Higher Education Panel's surveys on behalf of the Federal Government are conducted under contract support provided jointly by the National Science Foundation, the National Endowment for the Humanities, and the Department of Education (NSF Contract SRS-78-16385).

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Additional copies of this report are available from the Higher Education Panel, American Council on Education, One Dupont Circle, Washington, D. C. 20036.

Tenure Practices at Four-Year Colleges and Universities

Frank J. Atelsek
Irene L. Gomberg

Higher Education Panel Reports

Number 48 July 1980

American Council on Education

Washington, D.C. 20036

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Any opinions, findings, and conclusions or recommendations
are those of the authors and do not necessarily reflect
the views of the sponsoring agencies.

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Acknowledgments

The ideas for this survey were developed by Larry Lacy and Charles H. Dickens of the Division of Science Resources Studies at the National Science Foundation. The Federal Advisory Board, the Council's Higher Education Panel Advisory Committee, and the FAB's Technical Advisory Committee all contributed useful guidance.

Once again, we wish to express our special gratitude to the Panel's campus representatives and the survey respondents for their assistance and continuing co-operation.

Highlights

Faculty Composition and Tenure

- During 1978-79, more than 222,000 faculty were employed full-time at 1,200 four-year colleges and universities in the physical sciences, engineering, mathematical sciences, life sciences, social sciences, humanities, and education.
- At public institutions, 69 percent of full-time faculty were tenured; 23 percent held tenure-track positions but were not yet tenured.
- At private institutions, 63 percent of full-time faculty were tenured; 32 percent held tenure-track positions but were not yet tenured.
- The physical sciences had the largest proportion of full-time faculty with tenure (76 percent), and social sciences had the smallest proportion (63 percent).
- On the whole, institutions expected to employ persons in nontenure-track positions for an average of three years.

Tenure Approval Rates

- Of the 12,400 full-time faculty members formally considered for tenure during 1978-79, 58 percent were granted tenure and 22 percent remained eligible for future reconsideration.
- The tenure approval rate was highest at private universities (74 percent) and lowest at private four-year colleges (49 percent).
- The tenure approval rate was highest in engineering (70 percent) and lowest in the social sciences (53 percent).

Pretenure Probation

- On average, public institutions reported slightly shorter pretenure probationary periods than did private institutions (5.4 years vs. 5.9 years); both expected a slight lengthening of the period by 1984 (.1 and .3 additional years, respectively).
- Approximately 3 of every 10 institutions accepted postdoctoral appointments as part of the pretenure probationary period; these institutions applied, on average, nearly 2 years of postdoctoral experience toward pretenure probation.
- At 6 of every 10 public institutions, the system office set the length of pretenure probationary periods; at 9 of every 10 private institutions, the institution itself did so.

Background

This survey sought information about tenure practices at universities and four-year colleges. It was prompted by two interests of the survey sponsor, the National Science Foundation. NSF wished to learn more about the movement of faculty in academia to anticipate job opportunities for younger faculty in the near future. For the longer term, NSF needed information about tenure practices to develop a computer model of faculty flows which would project future faculty openings.

Questions were asked about how the faculties in selected fields were distributed within and outside the tenure system; how, in a given year, the tenure selection system actually worked as measured by approval rates, deferred decisions, and early releases of tenure-track faculty; and what changes in tenure practices were anticipated five years hence.

Methods Summary

The Higher Education Panel is a continuing survey research program created in 1971 by the American Council on Education to conduct specialized surveys on topics of current policy interest to the higher education community and government agencies. The Panel is a stratified sample of 760 colleges and universities drawn from the more than 3,000 institutions listed in the National Center for Education Statistics' (NCES) Education Directory. The Panel's stratification design is based primarily on type (university, four-year college, two-year college), control (public, private), and size (full-time-equivalent enrollment). For any given survey either the entire Panel or an appropriate subgroup is used.

The survey instrument (see Appendix A) was mailed on October 12, 1979, to all universities and four-year colleges in the Panel except independent medical schools. Twenty-four of the sample institutions reported having no tenure system. Sixteen reported having none of the discipline categories surveyed. (These were engineering; the physical, mathematical, life, and social sciences; the humanities; and education.)

Consequently, the survey sample was reduced to 461 institutions. After mail and telephone follow-up activity was completed, the field phase of the survey was closed on February 8, 1980, with a response rate of 74 percent.

According to NCES data, 1,481 four-year colleges and universities in the survey population had tenure systems in 1977-78. This number was adjusted to account for institutions not offering instruction in disciplines covered in the HEP survey by assuming that their representation in the population was similar to their representation in the Panel. Therefore, for the HEP survey, the eligible population of institutions with tenure systems and at least one of the applicable fields was estimated at 1,238. Appendix B shows the stratification design for weighting and a comparison of respondents and nonrespondents, and Appendix C discusses the reliability of the survey estimates.

Readers are reminded that not all fields were included in the survey, notably business, allied health, and the arts. Please refer to the definitions in Appendix A.

Findings

During 1978-79 the more than 1,200 universities and four-year colleges covered by this survey[1] employed about 222,000 full-time faculty. Of these, 70 percent were at public institutions. Tenure status of the professoriate in both public and private sector institutions is summarized in figure 1. The majority had already achieved tenure (69 percent at public and 63 percent at private institutions). Those who held appointments to tenure-track[2] positions but were not yet tenured accounted for 23 percent of the full-time faculty at public institutions, compared with 32 percent at private institutions.

A relatively small proportion of the faculty were in positions that exclude any prospect for tenure (8 percent at public and 5 percent at private institutions). Thus,

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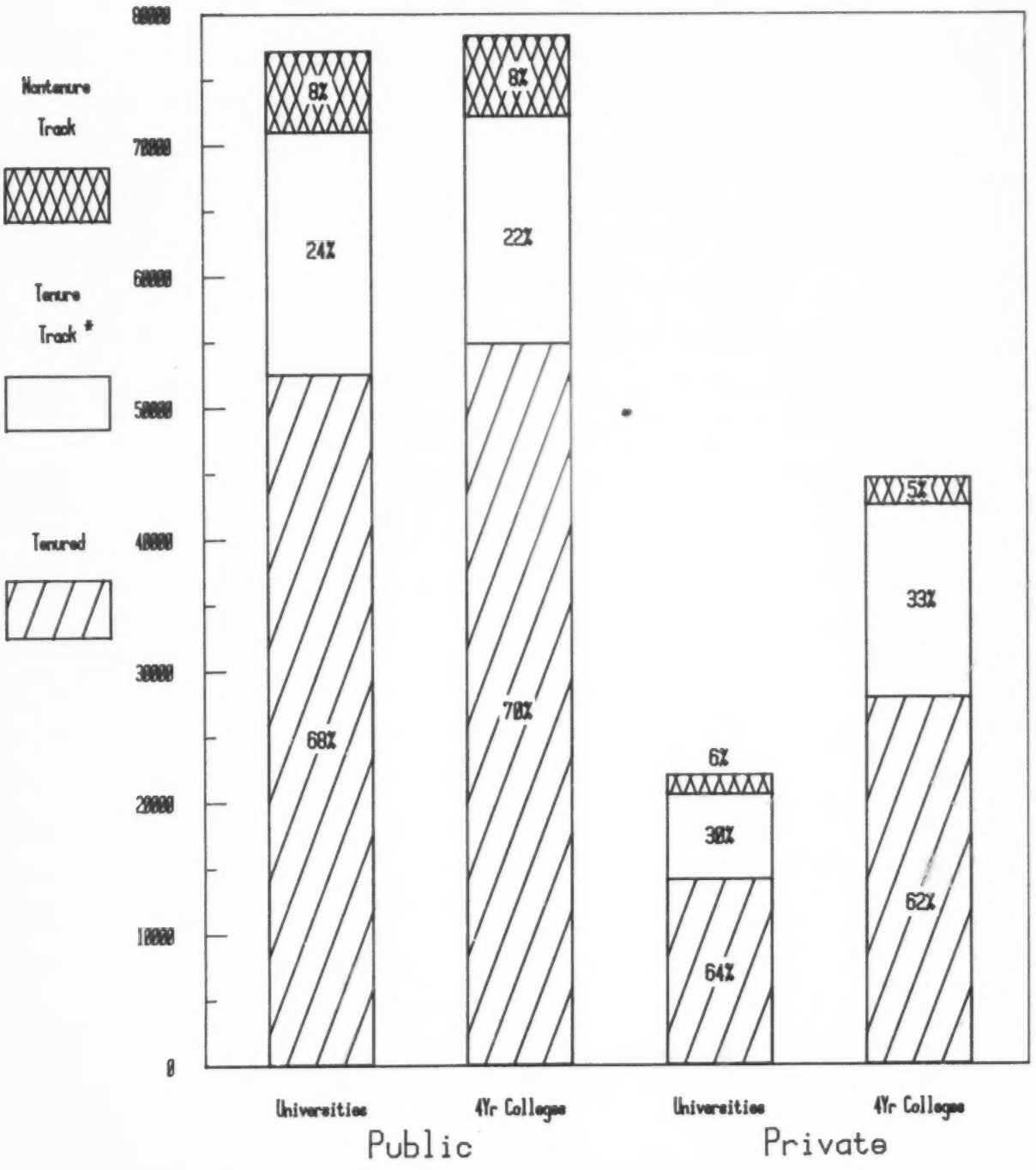
[1] Only institutions having a tenure system and at least one of the seven selected field groupings were represented in the survey.

[2] "Tenure-track" describes faculty who currently do not have tenure but who are in positions that qualify them for future consideration for tenure appointments.

Fig. 1 Tenure Status of Full-Time Faculty

By Type of Institution 1978-1979



*Not tenured but eligible for future consideration for tenure appointment.

whereas private institutions had a slightly larger proportion of their full-time faculty appointed to tenure-track positions (95 vs. 92 percent), a somewhat smaller proportion had actually achieved tenure (63 percent at private and 69 percent at public institutions). Figure 1 also shows that the distribution of tenure status is quite similar when comparing universities and four-year colleges within sectors.

Tenure Status by Field

The distribution of full-time faculty among the seven selected fields is shown in figure 2. More than one-half of the professoriate were in engineering and the sciences. This proportion includes those in the social sciences (20 percent), the life sciences (12 percent), the physical sciences (9 percent), the mathematical sciences (7 percent), and engineering (7 percent). The humanities faculty accounted for more than one quarter (28 percent) of the professoriate, and the education faculty for 17 percent.

Considerable variation exists by field in the tenure status of faculty members (see figure 3). In the physical sciences, for example, 75 percent of the full-time faculty were already tenured, 20 percent were in tenure-track positions, and 5 percent were employed in positions not eligible for tenure. Among the education faculty, however, the proportion in nontenure-track positions was almost twice as large (9 percent); fewer than two-thirds of the education faculty (65 percent) had achieved tenure and 26 percent were in tenure-track positions.

In general, the differences in tenure status among the broad science and engineering categories depicted in figure 3 are consistent with the findings of earlier Panel surveys on young doctorate faculty. The social sciences tend to have greater proportions of young doctorate faculty than do the physical sciences and engineering fields. Thus, it is likely that more of the senior faculty in the latter fields would have already served their probationary period and been granted tenure. It is also evident from earlier HEP surveys that the influx of new faculty slowed during the seventies and that, as a consequence, the pool of younger faculty awaiting tenure is smaller in some physical sciences and engineering fields.

Fig. 2 Distribution of Full-Time Faculty

By Field 1978-1979

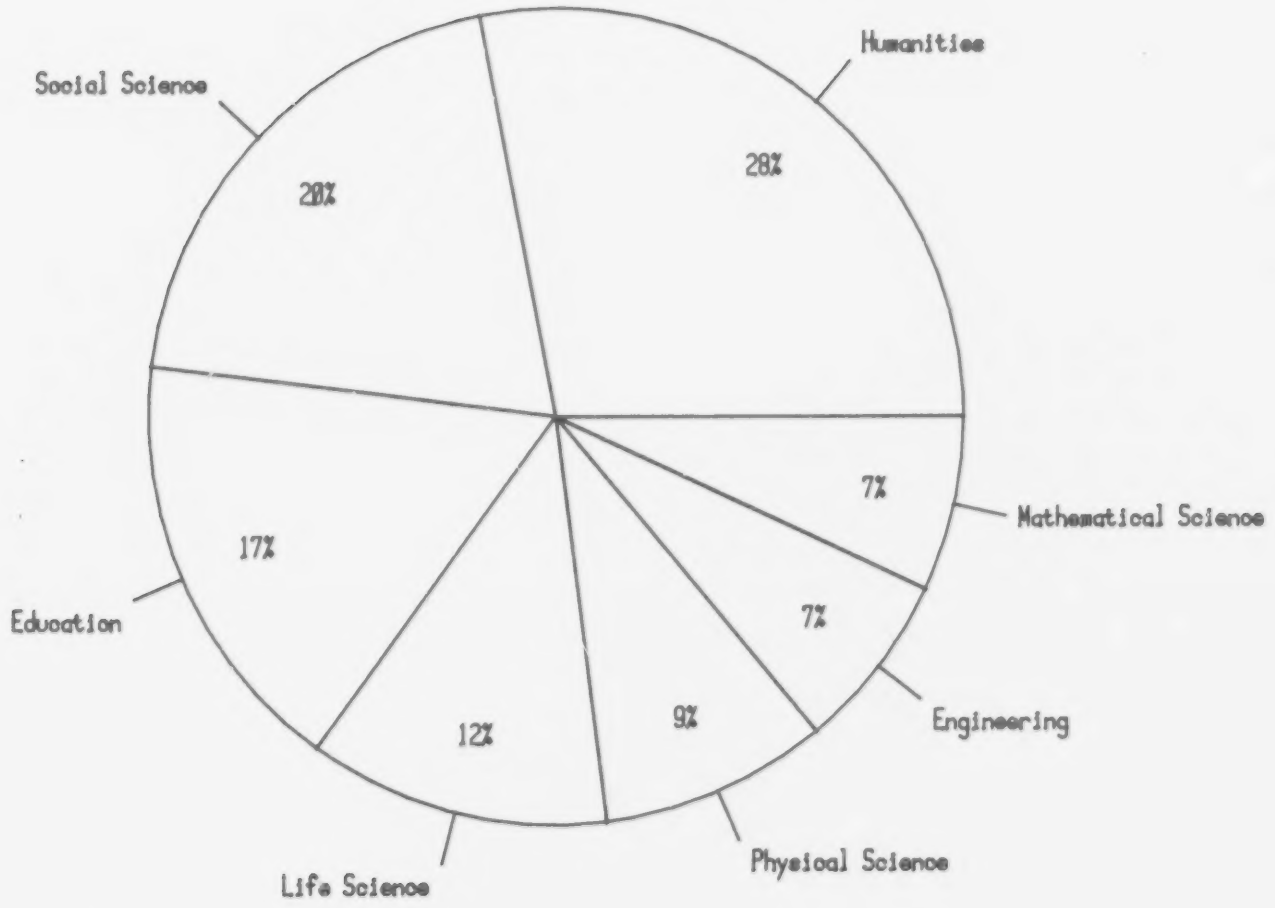
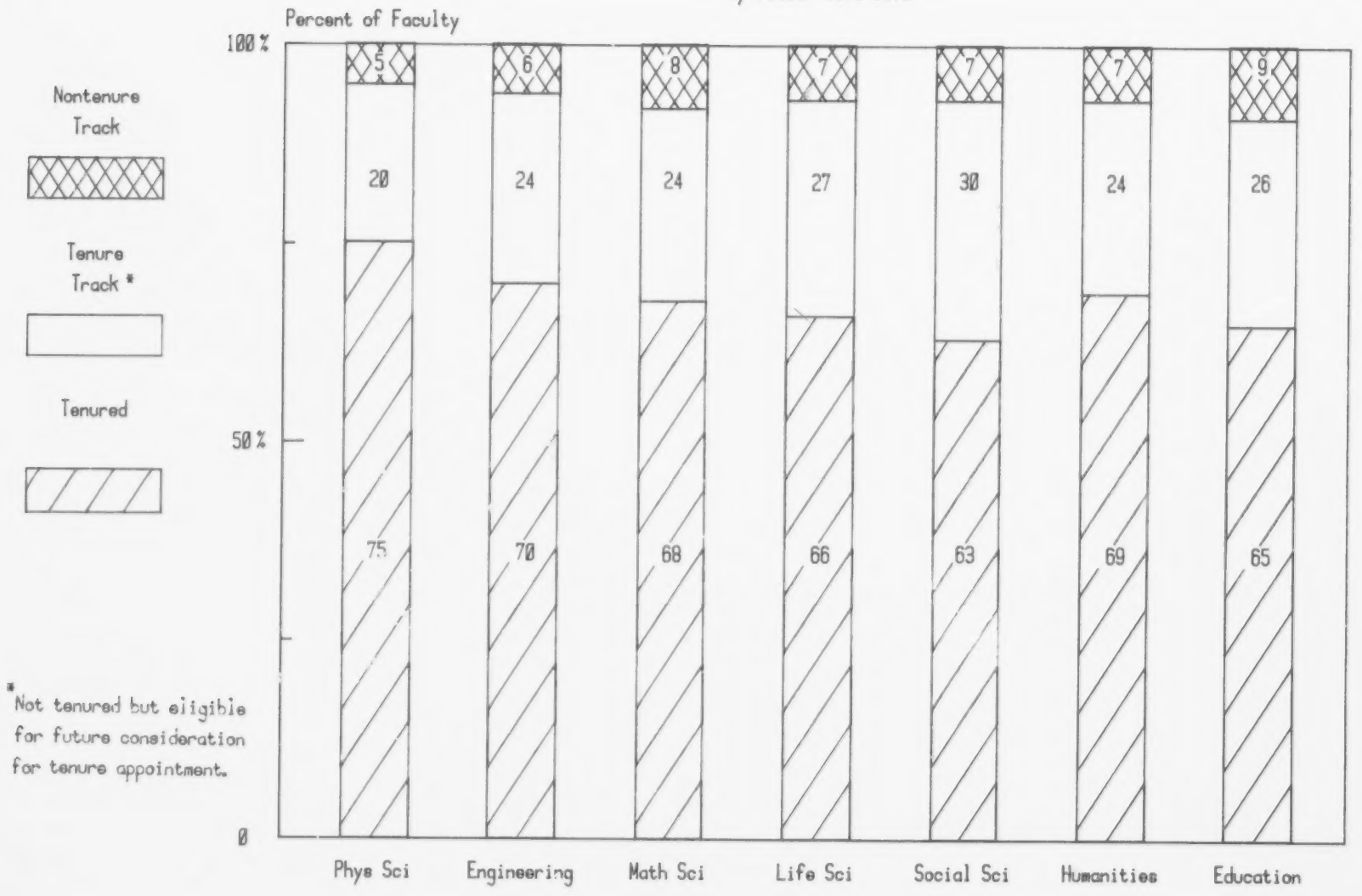


Fig. 3 Tenure Status of Full-Time Faculty

By Field 1978-1979



* Not tenured but eligible for future consideration for tenure appointment.

Job Duration of Nontenure-Track Faculty

To assess the degree of permanence that can be ascribed to the nontenure-track faculty positions, respondents were asked to estimate the expected duration of employment for such faculty hired since 1975. Overall, persons in nontenure-track positions were expected to be employed for an average of three years, with only minor variations among the various institutional types. As the summary table A below also indicates, the average duration of these faculty appointments in science and engineering fields was similar to those in the humanities. On the average, nontenure-track faculty were expected to stay in their jobs longer in university settings, and particularly at public universities (a 3.7 year average). In contrast, such faculty at private four-year colleges were expected to average 2.9 years of employment in science and engineering fields and 2.7 years in the humanities.

Table A

Average Expected Duration of Employment Among Nontenure-Track Faculty Hired Since 1975

Institutional Type	Average Number of Years	
	Science & Engineering	Humanities
Public universities	3.7	3.7
Private universities	2.8	3.2
Public four-year colleges	3.1	3.2
Private four-year colleges	2.9	2.7

Although conducted for another purpose, a 1977 Panel survey[3] of nontenure-track personnel from selected biomedical science fields warrants mention here. The survey findings indicated that many nontenure-track faculty had a limited service role within their departments. Less than half were eligible to apply for research support and take a principal part in the research functions of the department, and relatively few actually did so. In the three years prior to the 1977 survey, fewer than one in five

[3]Irene L. Gomberg and Frank J. Atelsek, Nontenure-Track Science Personnel: Opportunities for Independent Research, Higher Education Panel Report No. 39, September 1978.

nontenure-track staff applied for research support, and only one in ten actually received support as a principal investigator.

Tenure Decisions During 1978-79

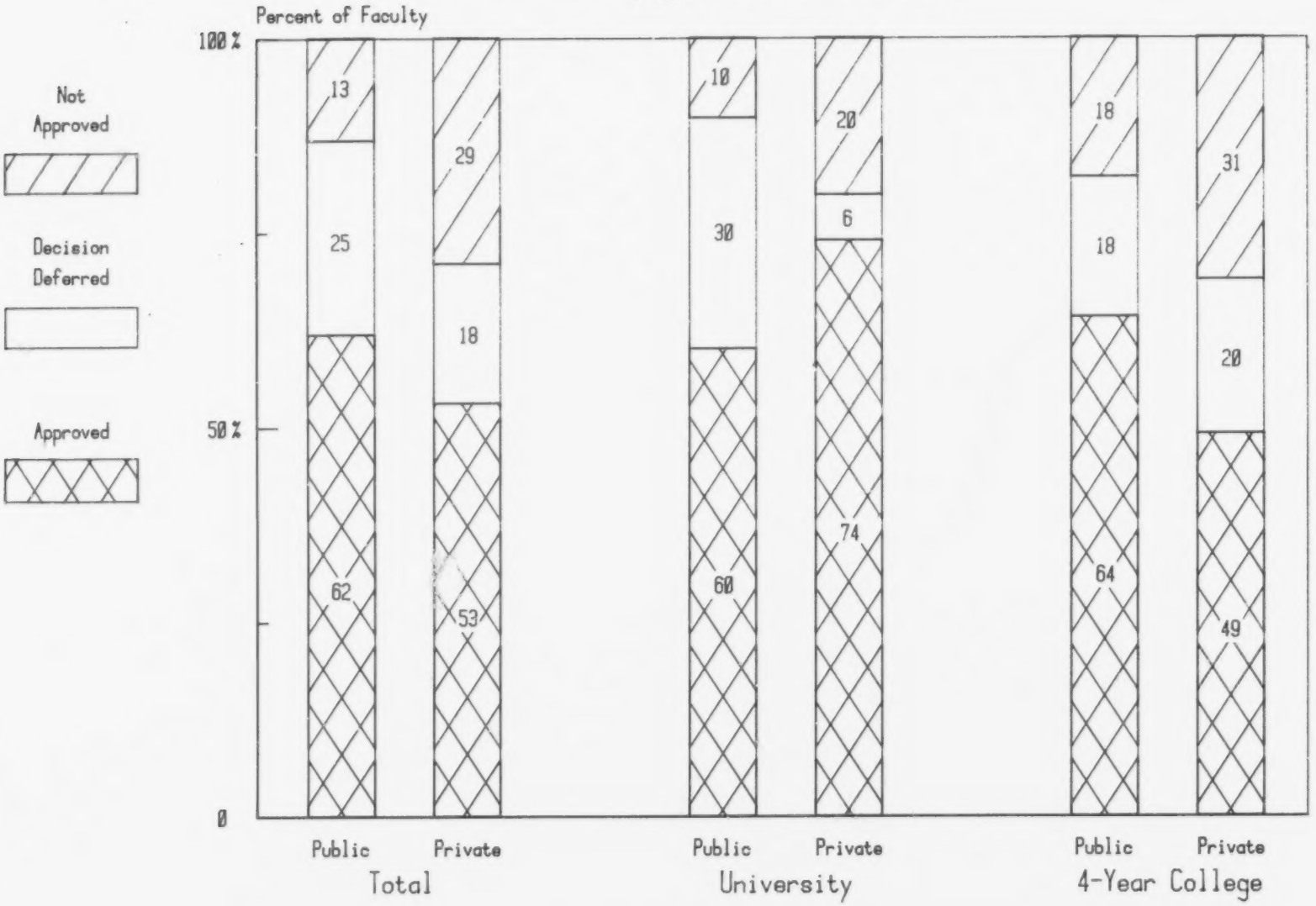
More than 12,000 faculty members were formally considered for tenure during the 1978-79 academic year. Of these, almost three of every five (58 percent) were granted tenure and about one of every five (22 percent) remained eligible for reconsideration at some future time. Although not specified in the survey data, it is assumed that the remaining fifth would relinquish their tenure-track positions in the near future.

How the tenure approval process worked within institutional categories during the 1978-79 academic year is summarized in figure 4. Overall, the tenure approval rate was somewhat higher at public than at private institutions (62 percent and 53 percent, respectively). Among university faculty, however, the approval rate was substantially higher in the private sector where 74 percent of those considered were approved for tenure, compared with only a 60 percent approval rate at public universities. However, in examining these dissimilar approval rates, one should note that at public universities, final decisions on almost one-third (30 percent) of faculty considered for tenure were deferred and that these individuals were eligible for reconsideration at some future time. In contrast, decisions were deferred for only 6 percent of the faculty considered for tenure at private universities.

It is possible that these considerable differences between public and private universities are more matters of form than substance; i.e., at public but not at private universities, faculty members, by tradition, are allowed to apply for tenure several years before completing their full probationary period. Those who fail to achieve tenure at the early stage remain eligible for reconsideration toward the end of their full probationary period. This supposition is consistent with other data showing that a greater proportion of the untenured faculty at public than at private universities were up for tenure consideration during the survey year (21 percent compared to 13 percent).

Fig. 4 Faculty Considered for Tenure

By Type of Institution 1978-1979



As figure 4 shows, the end result of the tenure process at public and private universities is more clear cut. Private universities denied tenure to twice the proportion of faculty than did the public universities (20 percent vs. 10 percent of those considered for tenure during the year).

The lowest tenure approval rates occurred at private four-year colleges (49 percent), with 20 percent of the decisions deferred. At public four-year colleges, the approval rate was considerably higher (64 percent) with 18 percent of the decisions deferred. Overall, the proportion of faculty members who were considered for but denied tenure was greater at private than at public colleges (31 percent and 18 percent, respectively).

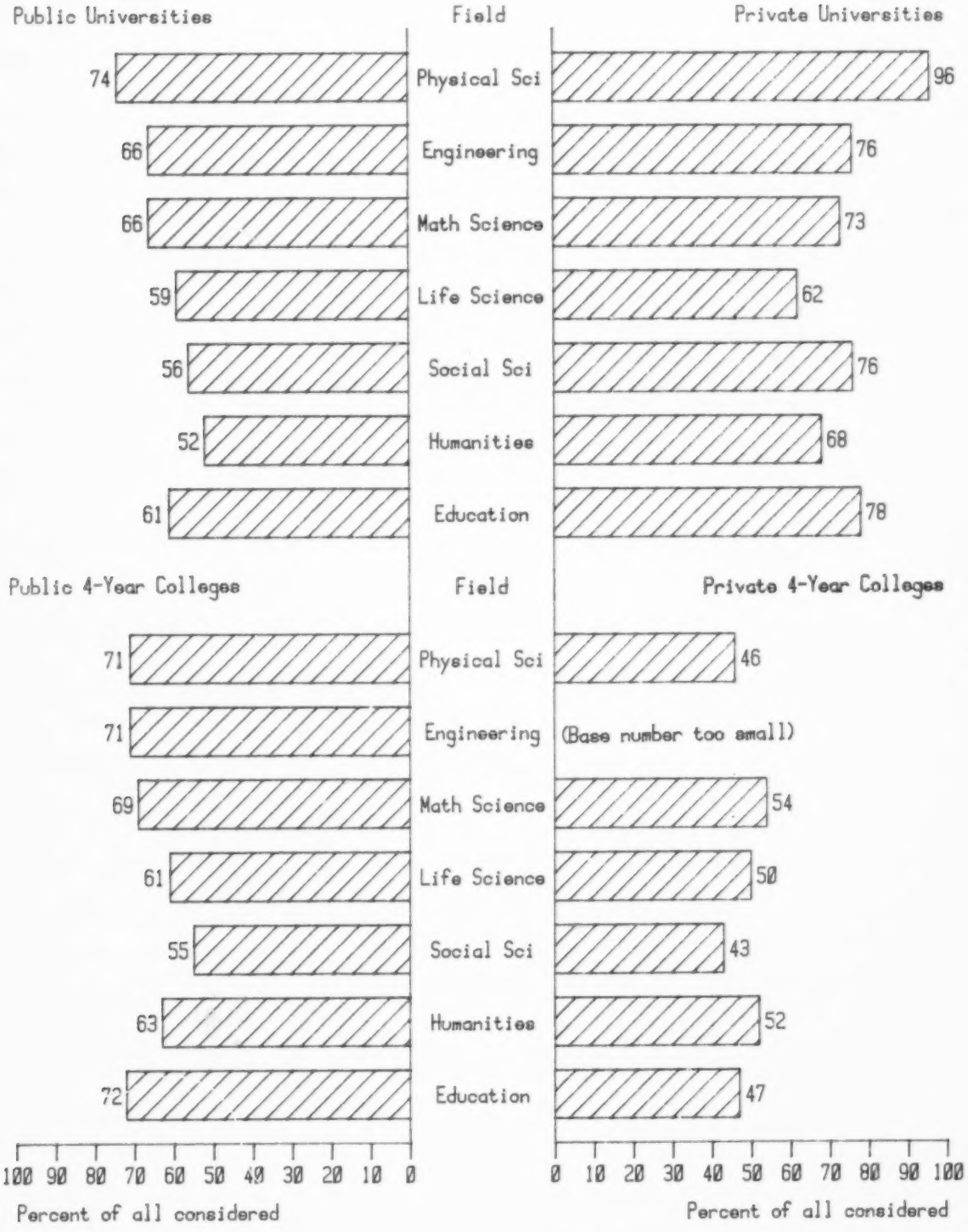
Approval for Tenure by Field. Within universities, tenure approval rates varied widely, ranging from a high of 96 percent in the physical sciences at private universities to a low of 52 percent among the humanities faculty at public universities (figure 5). In all of the fields covered by the survey, the proportion of faculty approved for tenure was consistently higher in private universities than at public universities.

In contrast to the situation for universities, the tenure approval rates were consistently higher at public than at private colleges for all fields. For example, the approval rate was above 70 percent each for education, physical science, and engineering faculties at the public four-year colleges. This rate was less than 50 percent at private four-year colleges for faculties in education (47 percent), the physical sciences (46 percent), and the social sciences (43 percent). In general, approval rates at four-year colleges--public and private combined--were somewhat lower than at the universities.

Future Tenure Approval Rates. As shown in table B below, all types of institutions except private universities estimated that greater proportions of faculty considered for tenure would be approved in the period five years from now. Compared with the 1978-79 tenure approval rates, public universities anticipated increases of 12 percentage points and public four-year colleges anticipated increases of 6 percentage

Fig. 5 Faculty Approved for Tenure

By Field and Type of Institution



points. The largest increase was expected by the private four-year colleges (from 49 percent to 67 percent), whereas at private universities a slight decline in approval rates was expected (from 74 percent to 72 percent).

Table B

Current and Future Tenure Approval Rates

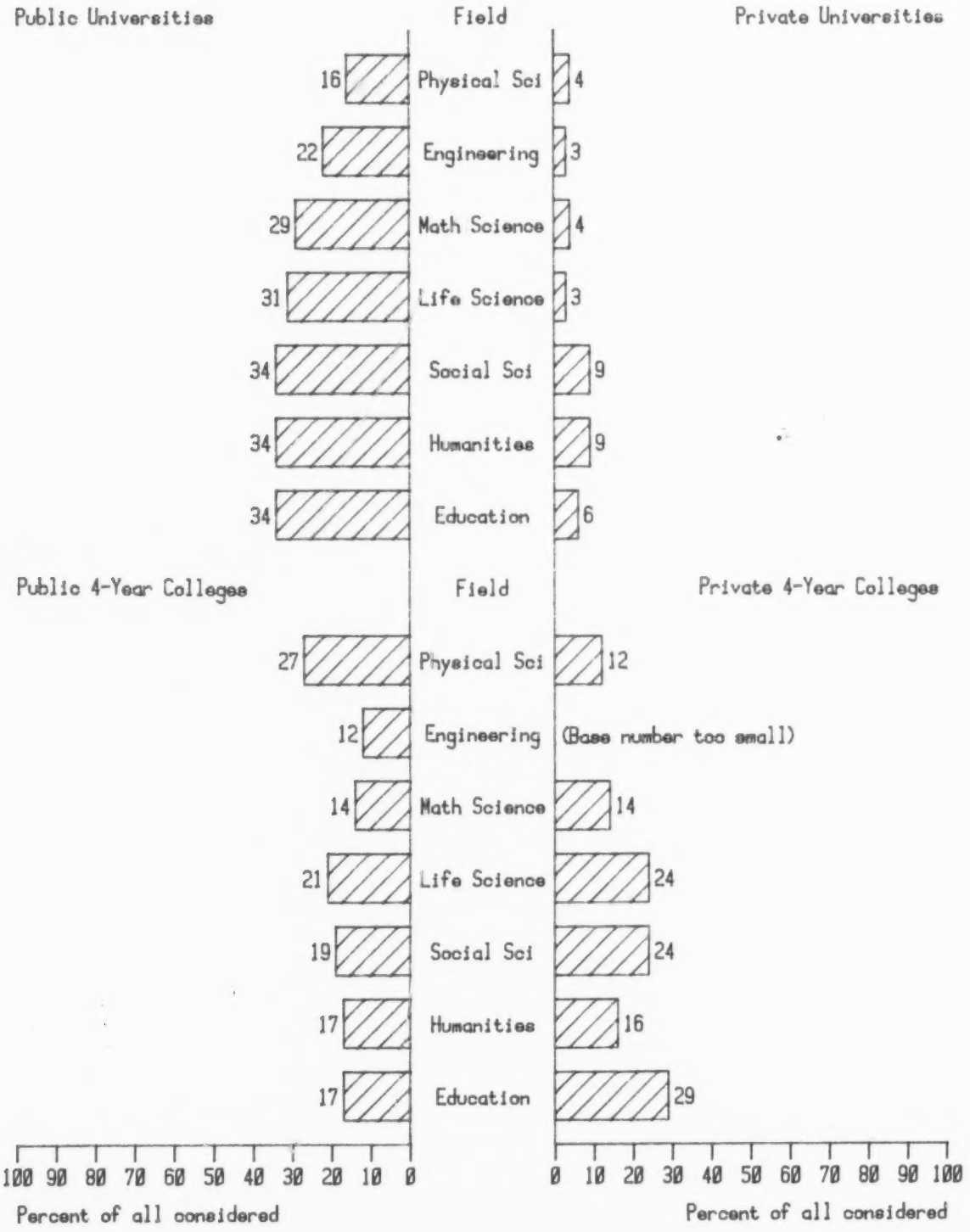
Institutional Type	Average Tenure Approval Rate: Academic Year 1978-79	Average Tenure Approval Rate: Estimates for Academic Year 1983-84
Public universities	60	72
Private universities	74	72
Public four-year colleges	64	70
Private four-year colleges	49	67

These comparisons should be considered with some reservation for three reasons. First, they are based on estimates about a tenure circumstance five years in the future. Second, and perhaps more important, some respondents indicated that the criteria for selection to tenure-track positions are becoming more stringent. Therefore, future approval rates may be higher because of the changes in the initial screening of candidates to tenure-track positions. In addition, the current approval rates do not account for approvals resulting from deferred decisions whereas the rates expected in the future may do so.

Deferral of Tenure Decisions. The findings also show strong differences by sector in the proportions of faculty for whom the tenure decision was deferred to some future year. As discussed earlier and again shown in figure 6, it is apparent that such deferrals were much less frequent at private than at public universities. In all seven fields surveyed, fewer than 10 percent of the faculty members considered for tenure at private universities had the decision deferred to a later year. At public universities, however, tenure decisions were deferred for substantial proportions of the faculty

Fig. 6 Faculty to be Reconsidered for Tenure

By Field and Type of Institution



under consideration. Deferrals ranged from 16 percent for the physical science faculty to one-third or more of the faculty in education, the social sciences and the humanities. Overall deferral rates for four-year colleges did not differ much by institutional control. (It should be noted that these data on deferred tenure decisions are limited in their meaning in that the included faculty remained eligible for tenure without any certainty that it would eventually be granted.)

Denial of Tenure. The remaining faculty, not having been granted tenure, are assumed to leave their tenure-track positions in the near future. This faculty group is depicted in figure 7 by field and type of institution. It is evident that in 1978-79, private universities and four-year colleges denied tenure to greater proportions of faculty than did their public counterparts. This difference in denial rates (29 and 14 percent, respectively) held almost without exception for each of the seven fields covered in the survey. The physical sciences at the four-year colleges presents the most extreme illustration of this contrast. Whereas, at private colleges, 42 percent of the physical sciences faculty considered were denied tenure, at public colleges only 2 percent of the faculty drew this negative decision on their tenure.

Release Without Formal Consideration for Tenure

The survey also collected information about tenure-track faculty who were released during the 1978-79 academic year without having been formally considered for tenure. Respondents were asked to exclude from their counts those who voluntarily resigned for reasons other than anticipated nonrenewal of their contracts. Table C shows that relatively few faculty were released in this manner (1,313 of the 56,566 tenure-track faculty). The proportion released without formal consideration was smaller in university settings than at the four-year colleges.

With the exception of engineering at private four-year colleges, in no field were more than 4 percent of the tenure-track faculty released without formal consideration for tenure. For most fields the proportion of faculty given such early release was in the 1 or 2 percent range.

Fig. 7 Faculty Not Approved for Tenure

By Field and Type of Institution

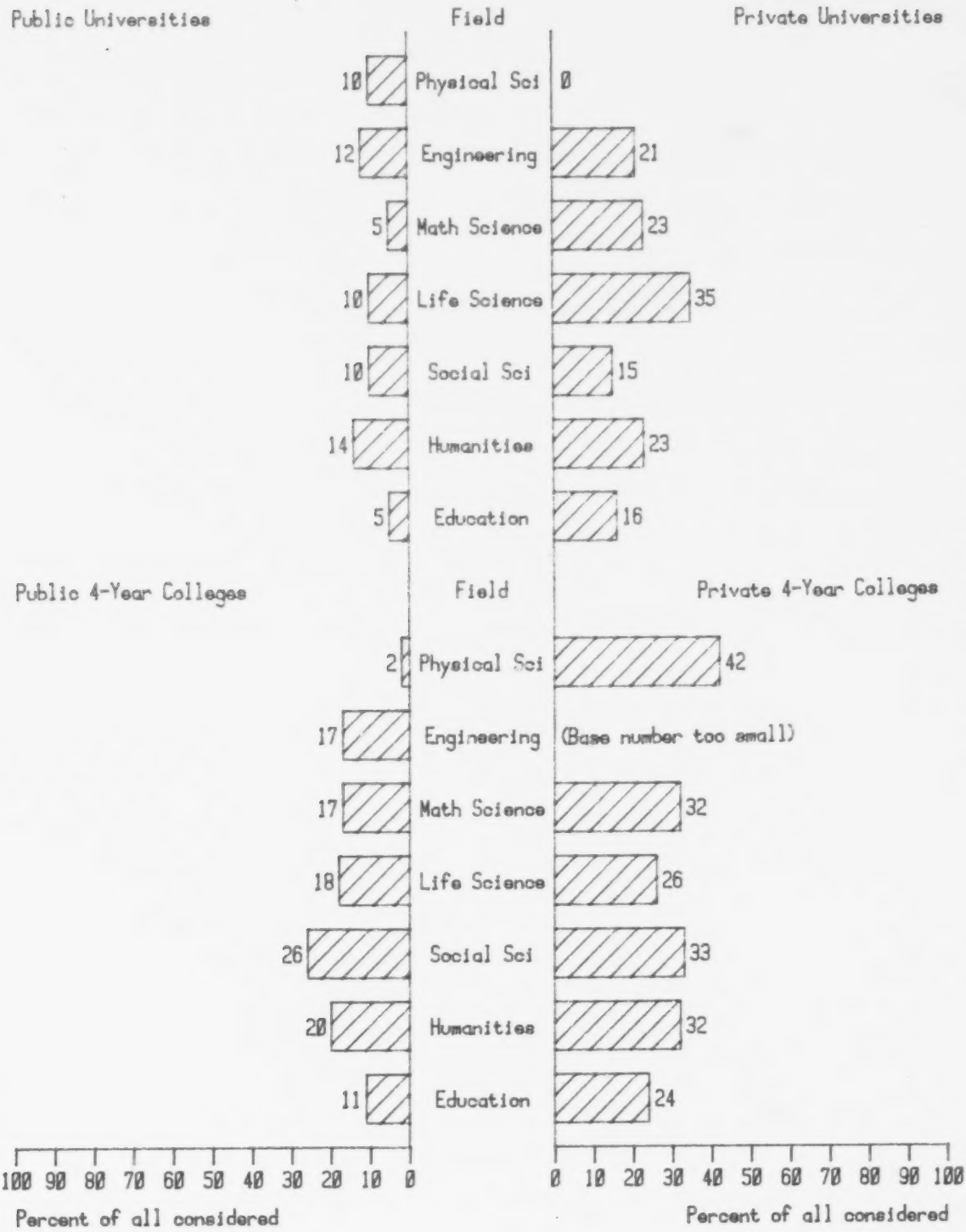


Table C
Tenure-Track Faculty Released Without Formal Consideration for Tenure

	Number Released	As a Percent of Untenured Tenure-Track Faculty
Universities		
Public	322	1.8
Private	116	1.7
Four-Year Colleges		
Public	438	2.6
Private	437	3.0

It should be noted that measures which attempt to ascribe specific reasons to voluntary resignations cannot be precise. Reasons for leaving faculty positions are often unspoken and sometimes too subtle to allow an accurate tally by a standard survey approach.

Selected Features of the Tenure Systems

Pretenure Probationary Periods. When assigned to tenure-track positions, inexperienced faculty members remain in a probationary status for a number of years before being formally considered for tenure. The survey included an inquiry about the average length of the current probationary period and an estimate of what the probationary period was expected to be five years hence. Table D shows these averages for colleges and universities in the public and private sectors.

Table D
Average Length of Pretenure Probationary Periods (in years)

	Academic Year 1978-79	Expected Five Years Hence
Universities		
Public	5.7	5.8
Private	6.1	6.5
Four-Year Colleges		
Public	5.3	5.4
Private	5.8	6.1

During the academic year 1978-79, private universities and four-year colleges had probationary periods that were somewhat longer on the average than public institutions. Over the following five years, the probationary period was expected to lengthen slightly in each institutional setting. Although the average expected increases were relatively modest (all averaging less than four-tenths of a year), officials at private institutions were expecting somewhat greater increases than were those at public universities and colleges.

The survey also inquired about decision making regarding the length of probationary periods. Table E indicates that individual departments had relatively little control over setting the length of the probationary period. Among the universities, the institution-level administration was usually responsible for length of probation (66 percent at public and 100 percent at private universities). Similarly, the institutional administration largely assumed this responsibility at private four-year colleges (86 percent). Among the public colleges, however, the system administration assumed the primary responsibility for setting length of probation (71 percent).

Table E
Administrative Level Responsible for Setting Length of Pretenure Probation

	Percent Total	Individual Departments	Institutional Administration	System Administration
Total Institutions	100	1	69	30
Universities				
Public	100	7	66	27
Private	100	0	100	0
Four-Year Colleges				
Public	100	0	29	71
Private	100	1	86	13

Credit for Postdoctoral Experience. Survey respondents were asked whether postdoctoral experience was accepted as part of the pretenure probationary period and, if so, the number of years creditable toward tenure. This information was obtained separately for two broad academic areas: the science and engineering fields and the humanities fields.

For both academic areas, postdoctoral appointments were accepted, at least in part, for the pretenure probationary period by fewer than 30 percent of the institutions covered in the survey. Among these institutions, an average of two years could be credited as probationary time. Table F below summarizes the extent to which public and private colleges and universities accepted time in postdoctoral positions for pretenure probation.

Table F
Acceptance of Postdoctoral Appointments in Pretenure Probation

	Science and Engineering		Humanities	
	Percent Accepting	Years Accepted	Percent Accepting	Years Accepted
Total Institutions	28	1.9	29	1.9
Universities				
Public	22	1.8	22	1.5
Private	29	1.1	29	.7
Four-Year Colleges				
Public	28	1.9	27	1.9
Private	29	2.0	31	2.0

Basic Report Tables

Table 1

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: All Institutions

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	21,046	100.0	15,896	75.5	4,132	19.6	1,018	4.8
Engineering	15,031	100.0	10,508	69.9	3,651	24.3	872	5.8
Mathematical sciences	16,569	100.0	11,233	67.8	4,006	24.2	1,330	8.0
Life sciences	26,599	100.0	17,433	65.5	7,282	27.4	1,884	7.1
Social sciences	44,022	100.0	27,917	63.4	13,018	29.6	3,087	7.0
Humanities	62,186	100.0	43,129	69.4	14,747	23.7	4,310	6.9
Education	36,678	100.0	23,667	64.5	9,730	26.5	3,281	8.9
Total	222,131	100.0	149,783	67.4	56,566	25.5	15,782	7.1

Table 2

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Public Institutions

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	14,314	100.0	11,162	78.0	2,316	16.2	836	5.8
Engineering	11,454	100.0	8,070	70.5	2,617	22.8	767	6.6
Mathematical sciences	12,210	100.0	8,376	68.6	2,716	22.2	1,118	9.1
Life sciences	21,123	100.0	13,905	65.8	5,564	26.3	1,654	7.8
Social sciences	29,567	100.0	19,636	66.4	7,660	25.9	2,271	7.6
Humanities	37,537	100.0	27,188	72.4	7,479	19.9	2,870	7.6
Education	29,235	100.0	19,606	67.1	6,882	23.5	2,747	9.3
Total	155,440	100.0	107,943	69.4	35,234	22.7	12,263	7.8

Table 3

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Private Institutions

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	6,732	100.0	4,734	70.3	1,816	27.0	182	2.7
Engineering	3,577	100.0	2,438	68.2	1,034	28.9	105	2.9
Mathematical sciences	4,359	100.0	2,857	65.5	1,290	29.6	212	4.8
Life sciences	5,476	100.0	3,528	64.4	1,718	31.4	230	4.2
Social sciences	14,455	100.0	8,281	57.3	5,358	37.1	816	5.6
Humanities	24,649	100.0	15,941	64.7	7,268	29.5	1,440	5.8
Education	7,443	100.0	4,061	54.6	2,848	38.3	534	7.1
Total	66,691	100.0	41,840	62.7	21,332	32.0	3,519	5.2

Table 4

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Public Universities

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	7,459	100.0	5,818	78.0	1,292	17.3	349	4.6
Engineering	8,518	100.0	6,056	71.1	1,916	22.5	546	6.4
Mathematical sciences	5,827	100.0	3,891	66.8	1,359	23.3	577	9.9
Life sciences	13,485	100.0	8,752	64.9	3,652	27.1	1,081	8.0
Social sciences	13,714	100.0	9,274	67.6	3,552	25.9	888	6.4
Humanities	15,700	100.0	11,000	70.1	3,400	21.7	1,300	8.2
Education	12,327	100.0	7,879	63.9	3,125	25.4	1,323	10.7
Total	77,030	100.0	52,670	68.4	18,296	23.8	6,064	7.8

Table 5

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Public Four-Year Colleges

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	6,855	100.0	5,344	78.0	1,024	14.9	487	7.1
Engineering	2,936	100.0	2,014	68.6	701	23.9	221	7.5
Mathematical sciences	6,383	100.0	4,485	70.3	1,357	21.3	541	8.4
Life sciences	7,638	100.0	5,153	67.5	1,912	25.0	573	7.5
Social sciences	15,853	100.0	10,362	65.4	4,108	25.9	1,383	8.7
Humanities	21,837	100.0	16,188	74.1	4,079	18.7	1,570	7.1
Education	16,908	100.0	11,727	69.4	3,757	22.2	1,424	8.4
Total	78,410	100.0	55,273	70.5	16,938	21.6	6,199	7.9

Table 6

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Private Universities

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	2,460	100.0	1,807	73.5	561	22.8	92	3.7
Engineering	2,986	100.0	2,053	68.8	842	28.2	91	3.0
Mathematical sciences	1,625	100.0	977	60.1	538	33.1	110	6.7
Life sciences	1,588	100.0	965	60.8	549	34.6	74	4.6
Social sciences	4,756	100.0	2,827	59.4	1,661	34.9	268	5.6
Humanities	6,970	100.0	4,363	62.6	2,050	29.4	557	7.9
Education	1,563	100.0	989	63.3	474	30.3	100	6.3
Total	21,948	100.0	13,981	63.7	6,675	30.4	1,292	5.8

Table 7

Tenure Status of Full-Time Faculty at Colleges and Universities 1978-79, by Selected Field: Private Four-Year Colleges

Field	Total Faculty		Tenured Faculty		Tenure-Track (Not Tenured) Faculty		Nontenure-Track Faculty	
	Number	Percent	Number	% of Total	Number	% of Total	Number	% of Total
Physical sciences	4,272	100.0	2,927	68.5	1,255	29.4	90	2.1
Engineering	591	100.0	385	65.1	192	32.5	14	2.3
Mathematical sciences	2,734	100.0	1,880	68.8	752	27.5	102	3.7
Life sciences	3,888	100.0	2,563	65.9	1,169	30.1	156	4.0
Social sciences	9,699	100.0	5,454	56.2	3,697	38.1	548	5.6
Humanities	17,679	100.0	11,578	65.5	5,218	29.5	883	4.9
Education	5,880	100.0	3,072	52.2	2,374	40.4	434	7.3
Total	44,743	100.0	27,859	62.3	14,657	32.8	2,227	4.9

Table 8

Expected Average Length of Employment of Nontenure-Track Faculty Hired Since 1975, by Institutional Category

Category	Expected Average Number of Years	
	Science and Engineering	Humanities
Public universities	3.7	3.7
Public four-year colleges	3.1	3.2
Total public	3.2	3.3
Private universities	2.8	3.2
Private four-year colleges	2.9	2.7
Total private	2.9	2.8
Total institutions	3.0	3.1

Table 9

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field:
All Institutions

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	4,132	79	1.9	782	18.9	516	66.0	128	16.3
Engineering	3,651	58	1.6	692	18.9	485	70.0	109	15.7
Mathematical sciences	4,006	91	2.3	798	19.9	511	64.0	142	17.7
Life sciences	7,282	94	1.3	1,477	20.2	849	57.4	382	25.8
Social sciences	13,018	386	3.0	2,605	20.0	1,391	53.3	644	24.7
Humanities	14,747	326	2.2	3,813	25.8	2,126	55.7	729	19.1
Education	9,730	279	2.9	2,278	23.4	1,384	60.7	585	25.6
Total	56,566	1,313	2.3	12,445	21.9	7,262	58.3	2,719	21.8

Table 10

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field:
Public Institutions

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	2,316	34	1.5	477	20.5	347	72.7	97	20.3
Engineering	2,617	29	1.1	521	19.9	352	67.5	101	19.3
Mathematical sciences	2,716	54	2.0	500	18.4	339	67.8	105	21.0
Life sciences	5,564	51	.9	1,061	19.0	634	59.7	295	27.8
Social sciences	7,660	222	2.9	1,679	21.9	936	55.7	445	26.5
Humanities	7,479	196	2.6	1,652	22.0	961	58.1	409	24.7
Education	6,882	174	2.5	1,418	20.6	952	67.1	350	24.6
Total	35,234	760	2.2	7,308	20.7	4,521	61.8	1,802	24.6

Table 11

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field: Private Institutions

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	1,816	45	2.5	305	16.7	169	55.4	31	10.1
Engineering	1,034	29	2.8	171	16.5	133	77.7	8	4.6
Mathematical sciences	1,290	37	2.9	298	23.1	172	57.7	37	12.4
Life sciences	1,718	43	2.5	416	24.2	215	51.6	87	20.9
Social sciences	5,358	164	3.1	926	17.2	455	49.1	199	21.4
Humanities	7,268	130	1.8	2,161	29.7	1,165	53.9	320	14.8
Education	2,848	105	3.7	860	30.1	432	50.2	235	27.3
Total	21,332	553	2.6	5,137	24.0	2,741	53.3	917	17.8

Table 12

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field: Public Universities

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	1,292	26	2.0	277	21.4	205	74.0	43	15.5
Engineering	1,916	27	1.4	381	19.8	253	66.4	84	22.0
Mathematical sciences	1,359	31	2.3	241	17.7	159	65.9	69	28.6
Life sciences	3,652	43	1.2	674	18.4	398	59.0	212	31.4
Social sciences	3,552	57	1.6	839	23.6	472	56.2	282	33.6
Humanities	3,400	82	2.4	782	23.0	410	52.4	264	33.7
Education	3,125	56	1.8	630	20.1	382	60.6	216	34.2
Total	18,296	322	1.8	3,824	20.9	2,279	59.5	1,170	30.5

Table 13

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field:
Public Four-Year Colleges

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	1,024	8	.8	200	19.5	142	71.0	54	27.0
Engineering	701	2	.3	140	19.9	99	70.7	17	12.1
Mathematical sciences	1,357	23	1.7	259	19.0	180	69.4	36	13.8
Life sciences	1,912	8	.4	387	20.2	236	60.9	83	21.4
Social sciences	4,108	165	4.0	840	20.4	464	55.2	163	19.4
Humanities	4,079	114	2.8	870	21.3	551	63.3	145	16.6
Education	3,757	118	3.1	788	20.9	570	72.3	134	17.0
Total	16,938	438	2.6	3,484	20.5	2,242	64.3	632	18.1

Table 14

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field:
Private Universities

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	561	5	.9	57	10.2	55	96.5	2	3.5
Engineering	842	12	1.4	141	16.7	107	75.8	4	2.8
Mathematical sciences	538	12	2.2	56	10.4	41	73.2	2	3.5
Life sciences	549	7	1.3	69	12.5	43	62.3	2	2.8
Social sciences	1,661	37	2.2	174	10.4	133	76.4	15	8.6
Humanities	2,050	35	1.7	296	14.4	200	67.5	26	8.7
Education	474	8	1.7	79	16.6	62	78.4	5	6.3
Total	6,675	116	1.7	872	13.0	641	73.5	56	6.4

Table 15

Tenure Practices at Four-Year Colleges and Universities 1978-79, by Selected Field:
Private Four-Year Colleges

Field	Number of Tenure-Track (Not Tenured) Faculty	Faculty Released Without Formal Consideration of Tenure		Faculty Formally Considered for Tenure					
				Considered		Approved		To Be Reconsidered	
		Number	% of (1)	Number	% of (1)	Number	% of (4)	Number	% of (4)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Physical sciences	1,255	40	3.2	248	19.7	114	45.9	29	11.6
Engineering	192	17	8.9	a	a	a	a	a	a
Mathematical sciences	752	25	3.3	242	32.1	131	54.1	35	14.4
Life sciences	1,169	36	3.1	347	29.6	172	49.5	85	24.4
Social sciences	3,697	127	3.4	752	20.3	322	42.8	184	24.4
Humanities	5,218	95	1.8	1,865	35.7	965	51.7	294	15.7
Education	2,374	97	4.1	781	32.8	370	47.3	230	29.4
Total	14,657	437	3.0	4,265	29.0	2,100	49.2	861	20.1

[a]Number of cases too small for data to be shown.

Table 16

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years:
All Institutions

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	66.0	72.9	5.7	5.9
Engineering	70.0	59.9	5.2	5.5
Mathematical sciences	64.0	70.3	5.7	5.9
Life sciences	57.4	71.9	5.7	5.9
Social sciences	53.3	70.3	5.7	5.9
Humanities	55.7	69.2	5.7	5.9
Education	60.7	68.0	5.7	5.9
Total	58.3	68.9	5.6	5.8

Table 17

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Public Institutions

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	72.7	72.3	5.4	5.5
Engineering	67.5	67.4	5.3	5.6
Mathematical sciences	67.8	72.0	5.4	5.5
Life sciences	59.7	70.9	5.4	5.5
Social sciences	55.7	69.9	5.4	5.5
Humanities	58.1	70.2	5.4	5.5
Education	67.1	68.9	5.4	5.5
Total	61.8	70.2	5.4	5.5

Table 18

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Private Institutions

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	55.4	73.6	6.1	6.3
Engineering	77.7	52.4	5.1	5.4
Mathematical sciences	57.7	68.6	6.0	6.3
Life sciences	51.6	72.9	6.0	6.3
Social sciences	49.1	70.8	6.0	6.3
Humanities	53.9	68.2	6.1	6.3
Education	50.2	67.2	6.0	6.3
Total	53.3	67.7	5.9	6.2

Table 19

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Public Universities

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	74.0	75.0	5.7	5.9
Engineering	66.4	72.6	5.7	5.9
Mathematical sciences	65.9	73.6	5.7	5.8
Life sciences	59.0	72.6	5.8	5.9
Social sciences	56.2	71.9	5.8	5.9
Humanities	52.4	71.7	5.8	5.9
Education	60.6	70.7	5.7	5.9
Total	59.5	72.5	5.7	5.8

Table 20

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Public Four-Year Colleges

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	71.0	71.6	5.3	5.4
Engineering	70.7	66.1	5.2	5.5
Mathematical sciences	69.4	71.6	5.3	5.4
Life sciences	60.9	70.4	5.3	5.4
Social sciences	55.2	69.4	5.3	5.4
Humanities	63.3	69.8	5.4	5.4
Education	72.3	68.4	5.3	5.5
Total	64.3	69.6	5.3	5.4

Table 21

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Private Universities

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	96.5	74.2	6.2	6.5
Engineering	75.8	72.8	6.1	6.6
Mathematical sciences	73.2	70.7	6.2	6.5
Life sciences	62.3	72.4	6.2	6.6
Social sciences	76.4	71.4	6.1	6.5
Humanities	67.5	70.4	6.2	6.6
Education	78.4	71.7	6.0	6.5
Total	73.5	71.9	6.1	6.5

Table 22

Faculty Approved for Tenure as a Proportion of Those Considered, and the Average Length of Pretenure Probationary Periods for Inexperienced Faculty, Currently (1978-79) and Expected in Five Years: Private Four-Year Colleges

Field	Approval Rate (in percentages)		Probationary Period (in years)	
	Current	Expected	Current	Expected
Physical sciences	45.9	73.4	6.0	6.2
Engineering	*	*	4.9	5.1
Mathematical sciences	54.1	68.1	6.0	6.2
Life sciences	49.5	73.0	6.0	6.3
Social sciences	42.8	70.7	6.0	6.2
Humanities	51.7	67.6	6.0	6.2
Education	47.3	66.0	6.1	6.3
Total	49.2	66.6	5.8	6.1

*Number of cases too small for data to be shown.

Table 23

Administrative Level Responsible for the Length of the Pretenure Probationary Period, 1978-79, by Institutional Category
(In Percentages)

Category	Total		Individual Departments	Institutional Administration	System Administration
	Number	Percent			
Public universities	111	100.0	6.6	66.6	26.6
Public four-year colleges	365	100.0	0	29.1	70.8
Total public	476	100.0	1.5	38.0	60.3
Private universities	69	100.0	0	100.0	0
Private four-year colleges	693	100.0	1.0	85.8	13.1
Total private	762	100.0	.9	87.0	12.0
Total institutions	1,238	100.0	1.1	69.0	29.8

Table 24

Acceptance of Postdoctoral Appointments as Part of the Pretenure Probationary Period, by Institutional Category

	SCIENCE AND ENGINEERING			HUMANITIES		
	Average Number of Years Accepted	Institutions Accepting Postdoctoral Experience		Average Number of Years Accepted	Institutions Accepting Postdoctoral Experience	
		Number	% of Total		Number	% of Total
Public universities	1.8	24	21.6	1.5	24	21.6
Public four-year colleges	1.9	103	28.2	1.9	100	27.4
Total public	1.9	127	26.7	1.8	124	26.1
Private universities	1.1	20	29.0	.7	20	29.0
Private four-year colleges	2.0	200	28.9	2.0	218	31.5
Total private	1.9	220	28.9	1.9	238	31.2
Total institutions	1.9	347	28.0	1.9	362	29.3

APPENDIX A: Survey Instrument

AMERICAN COUNCIL ON EDUCATION
ONE DUPONT CIRCLE
WASHINGTON, D. C. 20036

HIGHER EDUCATION PANEL
(202) 833-4757

October 12, 1979

Dear Higher Education Panel Representative:

Attached is the 48th survey of the Higher Education Panel, "Tenure Practices at Four-Year Colleges and Universities." It is sponsored by the National Science Foundation and seeks information regarding the effects of tenure practices on the employment of new faculty in higher education. More specifically, how long are pretenure probationary periods, what proportions of new faculty receive tenure, and how many faculty are released without being considered for tenure?

Tenure practices strongly influence the extent of faculty turnover and the number of new faculty hired each year. Over time, changes in tenure practices also lead to shifts in the faculty age distribution. Anecdotal evidence currently suggests that fewer faculty are attaining tenure and that increasing numbers of younger faculty are being hired for nontenure-track positions. This survey will help establish how faculty composition may change in the years ahead.

Based on field test results, we believe that the requested information can be provided from a central source. Please provide your best estimates where actual data are either not available or easily accessible. The field test also indicated that the provost's office or the office of the academic affairs would best be able to respond. As usual, however, we leave that judgment to you.

Please understand that responses from your institutions will be held in strictest confidence. As with all our surveys, the data you provide will be reported in summary fashion only and will not be identifiable with your institution. This survey is authorized by the National Science Foundation Act of 1950, as amended. While you are not required to respond, your cooperation is needed to make the results comprehensive, reliable, and timely.

Please return the completed questionnaire to us by November 2, 1979. A prepaid return envelope has been enclosed for your convenience. If you have any problems or questions, please do not hesitate to telephone us collect at (202) 833-4757.

Thank you for your continuing support.

Sincerely,

Frank J. Atelsek

Frank J. Atelsek
Panel Director

Does your institution have a tenure system? Yes____ No____
If "Yes", please complete the questionnaire. If not, please check "No" and return this form.

AMERICAN Co

HIGHER EDUCAT

Tenure Practices at Fo

Read definitions on page 4 before proceeding. If you have any questions or problems, please call the HEP staff collect at (202) 833-4757.

Columns (1) through (8) pertain to full-time faculty mem

	Full-Time Faculty at the Beginning of the Year:			Full-Time Faculty
	1 Number Tenured	2 Number Tenure-Track but Not Tenured	3 Number Nontenure-Track	4 Total Number Considered (see Note A below)
Fields				
Physical sciences				
Engineering				
Mathematical sciences				
Life sciences				
Social sciences				
Humanities				
Education				

Notes:

A. Exclude those who held tenure at another institution prior to appointment at yours.

B. Do not count those who voluntarily resigned for reasons other than anticipated nonrenewal of their contracts.

C. The estimate of full-time faculty who will be awarded tenure as a percentage of those who are considered.

3a. How long is it expected that non-tenure-track full-time faculty hired since 1975 will be retained?

	Science and Engineering	Humanities
Years		

Please keep a copy of this survey for your records.
Person completing form:

Name

Dept.

Phone

Please return this form by *November 2* to:

Higher Education Panel
American Council on Education
One Dupont Circle, N.W.
Washington, D.C. 20036

Thank you for your assistance.

BEST AVAIL

OMB #099-R0265
Exp. 6/81

L ON EDUCATION

ANEL SURVEY NO. 48:

ar Colleges and Universities

Columns (9) and (10) seek estimates of tenure practices five years from now

your institution during academic year 1978-79.

red for Tenure During the Year

5 those in he Number Received or Approved r Tenure	6 Number in (4) to be Reconsidered in Future	7 Number of Tenure-Track Faculty Released Without Having Been Formally Considered for Tenure (see Note B below)	8 Average Length of Pretenure Probationary Periods for Inexperienced Faculty (in years)	9 What do you expect the pretenure probationary periods to be five years from now? (in years)	10 In five years, what percentage of faculty considered for tenure will receive or be approved for it? (see Notes A and C below)

a. What is the average number of years in post-doctorate appointments accepted as part of the pretenure probationary period in your institution?

	Science and Engineering	Humanities
Number of years accepted		
Check here if post-doctorate experience is *not* accepted	☐	☐

b. What level of administration has the primary responsibility for setting the length of pretenure probationary periods in your institution? *(please check only one)*

- ☐ Individual departments
- ☐ Institutional administration
- ☐ System administration

Why do you expect these changes to occur?

9a. _____

10a. _____

BLE COPY

Definitions

1. Full-time faculty

   Please include instructors, assistant professors, associate professors, full professors, and other equivalent ranks.

   Do not include the following: visiting professors, postdoctorates and research associates, graduate students, or others who are regular full-time members of the faculty.

   Do not include faculty whose primary appointment (more than half-time) is in your institution's medical school faculty.

   If a full-time faculty member has appointments in more than one of the fields below, include that faculty member in the field in which the most work time is spent.

2. Fields

   A. Science and engineering

   Physical sciences: Include chemistry, earth sciences, physics, geology, meteorology, astronomy, metallurgy, geophysics, pharmaceutical chemistry, and related fields.

   Engineering: Include aeronautical, architectural, biomedical, ceramic, chemical, civil, electrical, engineering sciences, environmental health engineering, geological, mechanical, mining, nuclear, petroleum, and all other forms of engineering. *(Exclude engineering technologies.)*

   Mathematical sciences: Include mathematics, statistics, computer sciences, data processing, systems analysis, and all related fields.

   Life sciences: Include biology, botany, zoology, ecology, embryology, entomology, genetics, nutrition, plant pathology, plant physiology, anatomy, biochemistry, biophysics, microbiology, pathology, pharmacology, physiology, and related fields. Also include agriculture, forestry, and related fields. *(Exclude agricultural economics, which should be reported under "social sciences".)*

   Social sciences: Include agricultural economics, geography, economics, anthropology, archeology, economics, linguistics, sociology, government (political science), demography, and psychology. *(Do not include history, social work, public administration, and other applied fields.)*

   B. Education

   Education: Include elementary, secondary, higher, adult, special and related fields of education.

   C. Humanities

   Humanities: Include English, foreign languages, history, philosophy, American studies, and related fields.

3. Post-doctorate appointment

   A *postdoctoral appointment* is a temporary appointment, the primary purpose of which is to provide for continued education or experience in research usually, though not necessarily, under the supervision of a senior mentor. Include individuals with Ph.D.'s or Sc.D.'s who devote full time to research activities or study in the department under temporary appointments carrying no academic rank. Such appointments are generally for a specific time period.

APPENDIX B: Stratification Design and Response Analysis

Survey responses were weighted by the ratio of the number of institutions in the population to the number of institutions in the Panel that responded to the survey item. Missing values within each of the ten columns of questionnaire items were replaced by the mean value reported for the appropriate field, separately for each stratification cell. Missing values for the remaining survey items were replaced by cell averages. Table B-1 shows the stratification design.

Table B-1: Stratification Design for Weighting

Strat cell	Population (N=1,238)	Panel Respondents (N=339)	Panel Nonrespondents (N=122)
Public Ph.D. universities	111	79	30
Private Ph.D. universities	69	45	24
Public black four-year colleges FTE > 3,000	11	5	5
Public nonblack four-year colleges FTE > 8,750	105	70	21
Private nonblack four-year colleges FTE > 8,750	13	6	4
Public four-year colleges FTE 3,700-8,750	77	30	10
Public four-year colleges FTE < 3,700	172	24	10
Private four-year colleges FTE 2,000-8,750	119	29	9
Private four-year colleges FTE 1,000-2,000	233	33	7
Private four-year colleges FTE < 1,000	328	18	2

Usable responses were received from 74 percent of the 461 eligible survey institutions. Relatively high response rates were recorded for the smaller institutions with total enrollment or undergraduate FTE enrollment below 1,000 students (87 percent and 85 percent, respectively), and for private four-year colleges (79 percent).

Lower-than-average response rates occurred for private universities (66 percent) and institutions in the East (69 percent) and in the West (70 percent).

Because the response rates of certain stratification cells are relatively low, caution should be exercised in interpreting the survey results. The reader is also encouraged to examine the confidence intervals for the estimates. These are shown in Appendix C.

Table B-2: Comparison of Respondents and Nonrespondents
(In percentages)

Characteristic	Respondents (N=339)	Nonrespondents (N=122)	Response Rate
Total	100.0	100.0	73.5
Control			
Public	61.4	62.3	73.2
Private	38.6	37.7	74.0
Type			
Public universities	23.3	24.6	72.5
Private universities	13.3	19.7	65.7*
Public four-year	38.3	37.7	73.7
Private four-year	25.1	18.0	79.4
Census region			
East	25.3	31.7	69.1
Midwest	27.7	20.8	78.8
South	31.2	28.3	75.5
West	15.8	19.2	69.7
Total enrollment			
Under 1,000	5.9	2.5	87.0*
1,000-4,999	27.7	28.7	72.9
5,000-9,999	25.7	29.5	70.7
10,000 or more	40.7	39.3	74.2
Undergraduate FTE			
Under 1,000	8.6	4.1	85.3*
1,000-4,999	36.3	40.2	71.5
5,000-9,999	31.3	28.7	75.2
10,000 or more	23.9	27.0	71.1

* Exceeds or falls short of the overall response rate by more than 10 percent.

APPENDIX C: Reliability of Survey Estimates

Since the statistics presented in this report are based on a sample, they will differ somewhat from the figures which would have been obtained if a complete census had been taken using the same survey instrument, instructions, and procedures. As in any survey, the results are also subject to reporting and processing errors and errors due to nonresponse. To the extent possible, these types of errors were kept to a minimum by methods built into the survey procedures.

The standard error is primarily a measure of sampling variability; that is, the variations that might occur by chance because only a sample of the institutions is surveyed. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; about 95 out of 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, knowing the standard error permits us to specify a range within which we can have a stated confidence that a given estimate would lie if a complete census, rather than a sample survey, had been conducted. As an example, please refer to the estimated number of tenured faculty in the physical sciences at all institutions--15,896. The standard error of the estimate is 406.7 which, when multiplied by 1.65, yields 671, or the half-length of the 90 percent confidence interval. Thus, the chances are about 90 out of 100 that a complete census would show the number of tenured faculty in the physical sciences to be more than 15,225 and less than 16,567.

The following table shows 90 percent confidence intervals of the estimated numbers of tenured, tenure-track, and nontenure-track faculty.

Table C-1: Ninety Percent Confidence Intervals of Estimated Number of Full-Time Faculty, 1978-79, by Institutional Control

Field	Number Tenured		Number Tenure-Track		Number Nontenure-Track	
	Estimate	Confidence Interval ±	Estimate	Confidence Interval ±	Estimate	Confidence Interval ±
TOTAL INSTITUTIONS						
Physical sciences	15,896	671	4,132	380	1,018	132
Engineering	10,508	905	3,651	446	872	132
Mathematical sciences	11,233	493	4,006	285	1,330	128
Life sciences	17,433	1,054	7,282	660	1,884	269
Social sciences	27,917	1,181	13,018	590	3,087	372
Humanities	43,129	1,753	14,747	798	4,310	401
Education	23,667	1,301	9,730	643	3,281	350
PUBLIC INSTITUTIONS						
Physical sciences	11,162	576	2,316	168	836	125
Engineering	8,070	784	2,617	389	767	129
Mathematical sciences	8,376	443	2,716	234	1,118	110
Life sciences	13,905	989	5,564	601	1,654	262
Social sciences	19,636	997	7,660	426	2,271	237
Humanities	27,188	1,376	7,479	478	2,870	276
Education	19,606	1,193	6,882	484	2,747	276
PRIVATE INSTITUTIONS						
Physical sciences	4,734	349	1,816	342	182	45
Engineering	2,438	461	1,034	222	105	31
Mathematical sciences	2,857	221	1,290	165	212	66
Life sciences	3,528	369	1,718	278	230	65
Social sciences	8,281	642	5,358	413	816	290
Humanities	15,941	1,103	7,268	643	1,440	293
Education	4,061	529	2,848	421	534	217

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